

PROCEDURA PUBBLICA DI SELEZIONE PER L'ASSUNZIONE DI N.1 RICERCATORE A TEMPO DETERMINATO AI SENSI DELL'ART.24, COMMA 3, LETT. B) DELLA LEGGE 240/2010 PER IL SETTORE CONCURSALE 01/A2 - SETTORE SCIENTIFICO DISCIPLINARE MAT/03 - GEOMETRIA - DIPARTIMENTO DI MATEMATICA E FISICA - UNIVERSITA' ROMA TRE.

VERBALE N. 2 – ALLEGATO A
(elenco pubblicazioni presentate dai candidati)

Aceto Paolo:

0. P. Aceto, *Rational homology cobordisms of plumbed manifolds and arborescent link concordance*, <http://people.mpim-bonn.mpg.de/paoloaceto/th.pdf> - **Tesi di dottorato**

1. P. Aceto, D. Celoria, J. Park, *Rational cobordisms and integral homology*, in corso di pubblicazione su Compositio Mathematica, arXiv:1811.014332.

2. P. Aceto, A. Alfieri, *On sums of torus knots concordant to alternating knots*, Bulletin of the London Mathematical Society, 2019, vol. 51, n. 2, 327–343, DOI: 10.1112/blms.12228, arXiv:1712.052523.

3. P. Aceto, M. Golla, A. Lecuona, *Handle decompositions of rational balls and Casson–Gordon invariants*, Proceedings of the American Mathematical Society, 2018, vol. 146, n. 9, 4059–4072, DOI: <https://doi.org/10.1090/proc/14035>, arXiv:1610.100324.

4. P. Aceto, M. Golla and K. Larson, *Embedding 3-manifolds in spin 4-manifolds*, Journal of Topology, 2017, vol. 10, n. 2, 301–323, DOI: 10.1112/topo.12010, arXiv:1607.063885.

5. P. Aceto, K. Larson, *Knot concordance and homology sphere groups*, International Mathematics Research Notices, 2017, vol. 2018, n. 23, 7318–7334, DOI: 10.1093/imrn/rnx091, arXiv:1605.078786.

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Angelini Elena:

0. E. Angelini, *The Torelli problem for Logarithmic bundles of hypersurface arrangements in the projective space* - **Tesi di Dottorato** (2013), arXiv: 1506.01931v1, http://www.bdim.eu/item?id=tesi_2013_AngeliniElena_1

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2. E. Angelini, L. Chiantini, *On the identifiability of ternary forms*, Linear Algebra and its Applications 599 (2020), 36–65, DOI: 10.1016/j.laa.2020.03.042, SCOPUS: s2.0-85082866519, WOS: in corso di aggiornamento, arXiv: 1901.01796v4.
3. E. Angelini, L. Chiantini, A. Mazzon, *Identifiability for a class of symmetric tensors*, Mediterranean Journal of Mathematics (2019), vol. 16, fascicolo 4, articolo 97, DOI:10.1007/s00009-019-1363-5, SCOPUS: s2.0-85067847253, arXiv: 1811.01865.
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7. E. Angelini, F. Galuppi, M. Mella, G. Ottaviani, *On the number of Waring decompositions for a generic polynomial vector*, Journal of Pure and Applied Algebra 222 (2018), 950–965, DOI: 10.1016/j.jpaa.2017.05.016, SCOPUS: s2.0-85019627702, WOS: 000417007400012, arXiv: 1601.01869v1.
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10. E. Angelini, *Logarithmic bundles of hypersurface arrangements in P^n* , Collectanea Mathematica, volume 65, numero 3 (2014), 285–302, DOI: 10.1007/s13348-014-0112-0, SCOPUS: s2.0-84905705702, WOS: 000340388400001, arXiv: 1304.5709v3.
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Bambozzi Federico:

0. F. Bambozzi, *On a generalization of affinoid varieties*, Padova2014, updated version of June2016 - **Tesi di Dottorato**
1. F. Bambozzi, O. Ben-Bassat, K. Kremnizer, *Analytic Geometry over F_1 and the Fargues-Fontaine curve*, Advances in Mathematics, Volume356, 7 November 2019.
2. F. Bambozzi, A. Vezzani, *Rigidity for rigid analytic motives*, Journal of the Institute of Mathematics of Jussieu (2019), 1-29.
3. F. Bambozzi, S. Murro, N. Pinamonti, *Invariant states on noncommutative tori*, 2019, in corso di pubblicazione su International Mathematics Research Notices.
4. F. Bambozzi, *Theorems A and B for dagger quasi-Stein spaces*, The Quarterly Journal of Mathematics, Volume 70, Issue2, June 2019, 703–735.
5. F. Bambozzi, O. Ben-Bassat, K. Kremnizer, *Stein domains in Banach algebraic geometry*, Journal of Functional Analysis, Volume 274, Issue 7, 1 April 2018, 1865-1927.
6. F. Bambozzi, *Closed graph theorems for bornological spaces*, Khayyam Journal of Mathematics, Volume 2, Issue 1, 2016, 81-111.
7. F. Bambozzi, O. Ben-Bassat, *Dagger Geometry as Banach Algebraic Geometry*, Journal of Number Theory 162 (2016), 391-462.

Benedetti Gabriele:

0. G. Benedetti, *The contact property for magnetic flows on surfaces*, doi.org/10.17863/CAM.16235, University of Cambridge,2015 - **Tesi di Dottorato**
1. G. Benedetti and J. Kang, *On a local systolic inequality for odd-symplectic forms*, accettato per pubblicazione su Portugaliae Mathematica, arXiv:1902.01261
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6. A. Abbondandolo, L. Asselle, G. Benedetti, M. Mazzucchelli, and I. A. Taimanov, *The multiplicity problem for periodic orbits of magnetic flows on the 2-sphere*, Advanced Nonlinear Studies 17 (2017), n. 1, 17–30

7. L. Asselle and G. Benedetti, *On the periodic motions of a charged particle in an oscillating magnetic field on the two-torus*, Mathematische Zeitschrift 286 (2017), n. 3-4, 843–859
8. G. Benedetti, *Magnetic Katok examples on the two-sphere*, Bulletin of the London Mathematical Society 48 (2016), n. 5, 855–865
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10. G. Benedetti, *The contact property for symplectic magnetic fields on S^2* , Ergodic Theory and Dynamical Systems 36 (2016), n.3, 682–713
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Bolognese Barbara:

0. B. Bolognese, *Two results on divisors on moduli spaces of sheaves on algebraic surfaces: generic Strange Duality on abelian surfaces and Nef cones of Hilbert schemes of points on surfaces with irregularity zero* - **Tesi di Dottorato**
1. B. Bolognese, M. Brandt, L. Chua, *From Curves to Tropical Jacobians and Back*. In: Smith G., Sturmfels B. (eds) Combinatorial Algebraic Geometry. Fields Institute Communications, vol 80. Springer, New York, NY (2017)
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 3. B. Bolognese, J. Huizenga, Y. Lin, E. Riedl, B. Schmidt, M. Woolf, X. Zhao, *Nef cones of Hilbert schemes of points*. Algebra & Number Theory 10 (4), 907-930 (2016)
 4. B. Benedetti, B. Bolognese, M. Varbaro, *Regulating Hartshorne's connectedness theorem*, J Algebr Comb (2017) 46: 33. <https://doi.org/10.1007/s10801-017-0744-8>
 5. B. Bolognese, A. Marian, D. Oprea and K. Yoshioka: *On the strange duality conjecture for abelian surfaces II*, J. Algebraic Geom. 26 (2017), 475-511.

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6. B. Bolognese, *A local compactification of the Bridgeland stability manifold*. arXiv:2006.04189

Ceria Michela:

0. M. Ceria, *Combinatorial structure of monomial ideals* - **Tesi di Dottorato**

1. M. Ceria, T. Mora, *Toward involutive bases over effective rings*, accettato per pubblicazione su Special issue of Applicable Algebra in Engineering, Communication and Computing, concerning "Algebraic Geometry from an Algorithmic point of View".
2. M. Ceria, B.Barkee, T.Moriarty, A.Visconti, *Why you cannot even hope to use Gröbner bases in cryptography: an eternal golden braid of failures*, accettato per pubblicazione su Special issue of Applicable Algebra in Engineering, Communication and Computing, concerning "Computer Algebra and application to combinatorics, coding theory and cryptography". DOI: 10.1007/s00200-020-00428-w
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4. M. Ceria, *Bar Code vs Janet tree*. Atti della Accademia Peloritana dei Pericolanti, Classe di Scienze Fisiche, Matematiche e Naturali, vol. 97, n. 2 (2019). DOI: 10.1478/AAPP.972A6
5. M. Ceria, *Bar code: a visual representation for finite sets of terms and its applications*, Mathematics in Computer Science, 14(2), 497-513 (2020), online in 2019. DOI:10.1007/s11786-019-00425-4
6. M. Ceria, T.Mora, M.Roggero, *A general framework for Noetherian well ordered polynomial reductions*, Journal of Symbolic Computation, vol. 95, 100-133 ISSN: 0747-7171, DOI: 10.1016/j.jsc.2019.02.002
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8. M. Ceria, T.Mora, A.Visconti, *Efficient computation of squarefree separator polynomials* (extended abstract), In: Davenport J., Kauers M., Labahn G., Urban J. (eds) Mathematical Software – ICMS 2018. Lecture Notes in Computer Science, vol 10931 p. 98-104, Springer, ISBN:9783319964171, ISSN: 1611-3349, South Bend, 2018. DOI:10.1007/978-3-319-96418-8_12
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11. M. Ceria, *A computational approach to the theory of adjoints*, Atti della Accademia Peloritana dei Pericolanti, Classe di Scienze Fisiche, Matematiche e Naturali, vol. 94, p. 1-14, ISSN: 1825-1242. DOI: 10.1478/AAPP.942A7
12. M. Ceria, T.Mora, M.Roggero, *Term-ordering free involutive bases*, Journal of Symbolic Computation, vol. 68, p. 87-108, ISSN: 0747-7171. DOI: 10.1016/j.jsc.2014.09.005

Chrysikos Ioannis:

0. I. Chrysikos, *Homogeneous Einstein metrics on generalized flag manifolds*, University of Patras, 2011 - **Tesi di Dottorato**

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2. I. Chrysikos, *A note on the volume of ∇ -Einstein manifolds with skew-torsion*, in corso di pubblicazione su Communications in Mathematics, 2020 (arXiv:1909.02052).
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4. D. V. Alekseevsky, I. Chrysikos, A. Taghavi-Chabert, *Decomposable $(4, 7)$ solutions in 11-dimensional supergravity*, Classical Quantum Gravity, Vol. 36 (2019), 075002, (28pp).
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8. I. Chrysikos, Y. Sakane, *Non-naturally reductive Einstein metrics on compact Lie groups*, Journal of Geometry and Physics, 116 (2017), 152–186.
9. I. Chrysikos, *Killing and twistor spinors with torsion*, Annals of Global Analysis and Geometry, Vol. 49 (2016), 105–141.
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14. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane, *Proving isometry for homogeneous Einstein metrics on flag manifolds by symbolic computation*, Journal of Symbolic Computation, Vol. 55, (2013), 59–71.
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21. A. Arvanitoyeorgos, I. Chrysikos, *Motion of charged particles and homogeneous geodesics in Kähler C-spaces with two isotropy summands*, Tokyo Journal of Mathematics, Vol. 32 (2), (2009), 487–500.
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Franchetti Guido:

0. G. Franchetti, *Pattern-forming in Non-equilibrium Quantum Systems and Geometrical Models of Matter*, University of Cambridge, 2013. - **Tesi di Dottorato**
1. G. Franchetti, *Harmonic forms and spinors on the Taub-bolt space*, J. Geometry Phys. 141, pp. 11–28, 2019. arXiv:1812.07512.
2. G. Franchetti, *Harmonic spinors on a family of Einstein manifolds*, Nonlinearity 31, pp. 2419–2441, 2018. arXiv:1705.02666.
3. G. Franchetti, B. J. Schroers, *Adiabatic dynamics of instantons on S^4* , Commun. Math. Phys. 353, pp. 185–228, 2017. arXiv:1508.06566.
4. G. Franchetti, R. Maldonado, *Monopoles, instantons, and the Helmholtz equation*, J. Math. Phys. 57, p. 073502, 2016. arXiv:1603.09575.
5. M. F. Atiyah, G. Franchetti, B. J. Schroers, *Time evolution in a geometric model of a particle*, J. High Energy Phys. 02, p. 062, 2015. arXiv:1412.5915.

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7. G. Franchetti, N. S. Manton, *Gravitational instantons as models for charged particle systems*, J. High Energy Phys. 03, p. 072, 2013. arXiv:1301.1624.
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9. M. Borgh, G. Franchetti, J. Keeling, N. G. Berloff, *Robustness and observability of rotating vortex lattices in an exciton-polariton condensate*, Phys. Rev. B 86, p. 035307, 2012. arXiv:1204.4095.

Fringuelli Roberto:

0. R. Fringuelli, *The Picard group of the universal moduli space of vector bundles on stable curves and a Franchetta conjecture for abelian varieties* - **Tesi di Dottorato**
1. R. Pirisi, R. Fringuelli, *The Brauer Group of the Universal Moduli Space of Vector Bundles Over Smooth Curves*, International Mathematics Research Notices, 12 2019.
2. R. Pirisi, R. Fringuelli, *The Picard Group of the Universal Abelian Variety and the Franchetta Conjecture for Abelian Varieties*, Michigan Math. J. 68 (2019), no. 3, 651–671.
3. R. Fringuelli, *The Picard group of the universal moduli space of vector bundles on stable curves*, Adv. Math. 336 (2018), 477–557.

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4. R. Fringuelli, F. Viviani, *On the Picard group scheme of the moduli stack of stable pointed curves*, <https://arxiv.org/pdf/2005.06920.pdf>
5. R. Fringuelli, F. Viviani, *The Picard group of the universal moduli stack of principal bundles on pointed smooth curves*, <https://arxiv.org/pdf/2002.07494.pdf>

Kowalzig Niels:

0. N. Kowalzig, *Hopf algebroids and their cyclic theory*, Tesi di Dottorato, Universiteit Utrecht (2009), ISBN 978-90-3935-099-7; disponibile su <http://igitur-archive.library.uu.nl/dissertations/2009-0702-200408/UUindex.html>. - **Tesi di Dottorato**
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Macchia Antonio:

0. A. Macchia, *The Arithmetical Rank of Edge Ideals*, Università degli Studi di Bari (Italy), 2014. – **Tesi di dottorato**
1. A. Macchia, J. Neves, M. Vaz Pinto, R. H. Villarreal, *Regularity of the vanishing ideal over a parallel composition of paths*, in corso di pubblicazione su *J. Commut. Algebra*, arXiv:1606.08621
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Morabito Filippo:

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PROCEDURA PUBBLICA DI SELEZIONE PER L'ASSUNZIONE DI N.1 RICERCATORE A TEMPO DETERMINATO AI SENSI DELL'ART.24, COMMA 3, LETT. B) DELLA LEGGE 240/2010 PER IL SETTORE CONCORSALE 01/A2 - SETTORE SCIENTIFICO DISCIPLINARE MAT/03 - GEOMETRIA - DIPARTIMENTO DI MATEMATICA E FISICA - UNIVERSITA' ROMA TRE.

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MPIM – Max Planck Institute for Mathematics, Bonn, Germany
Supervisor: *Peter Teichner*
- Sep 2015 - Aug 2017 **PostDoc in Mathematics**
Rényi Institute of Mathematics, Budapest, Hungary
Supervisor: *András I. Stipsicz*

QUALIFICATIONS

- **Qualification Maître de Conférences – Section 25 CNU**
Section: *Mathématiques*, Conseil national des universités
French national professional qualification to become Assistant Professor in Mathematics

RESEARCH INTERESTS

- Low-dimensional topology, knot concordance and homology cobordisms of 3-manifolds, smooth 4-manifold topology

PREPRINTS

- P. Aceto, J. Meier, A. N. Miller, M. Miller, J. Park, A. I. Stipsicz, “Branched covers bounding rational homology balls”, 2020, [arXiv:2002.10324](https://arxiv.org/abs/2002.10324)
- P. Aceto, J. Park, “Embedding lens spaces in definite 4-manifolds”, 2019, [arXiv:1903.01260](https://arxiv.org/abs/1903.01260)

- P. Aceto, M. H. Kim, J. Park, A. Ray “Pretzel links, mutation and the slice-ribbon conjecture”, 2018, [arXiv:1805.02885](#)

PUBLICATIONS

- P. Aceto, D. Celoria, J. Park “Rational cobordisms and integral homology”, to appear in *Compositio Mathematica*, [arXiv:1811.01433](#)
- P. Aceto, A. Alfieri, “On sums of torus knots concordant to alternating knots”, *Bulletin of the London Mathematical Society*, 2019, vol. 51, n. 2, 327–343, DOI:10.1112/blms.12228, [arXiv:1712.05252](#)
- P. Aceto, M. Golla, A. Lecuona, “Handle decompositions of rational balls and Casson–Gordon invariants”, *Proceedings of the American Mathematical Society*, 2018, vol. 146, n. 9, 4059–4072, DOI: <https://doi.org/10.1090/proc/14035>, [arXiv:1610.10032](#)
- P. Aceto, M. Golla and K. Larson, “Embedding 3-manifolds in spin 4-manifolds”, *Journal of Topology*, 2017, vol. 10, n. 2, 301–323, DOI:10.1112/topo.12010, [arXiv:1607.06388](#)
- P. Aceto and K. Larson, “Knot concordance and homology sphere groups”, *International Mathematics Research Notices*, 2017, vol. 2018, n. 23, 7318–7334, DOI: 10.1093/imrn/rnx091, [arXiv:1605.07878](#)
- P. Aceto and M. Golla, “Dehn surgeries and rational balls”, *Algebraic & Geometric Topology*, 2017, vol. 17, n. 1, 487–527, DOI: 10.2140/agt.2017.17.487, [arXiv:1509.07559](#)
- P. Aceto, “Rational homology cobordisms of plumbed manifolds”, *Algebraic & Geometric Topology*, 2020, vol. 20, n. 3, 1073–1126, DOI: 10.2140/agt.2020.20.1073, [arXiv:1502.03863](#)
- P. Aceto, “Symmetric ribbon discs”, *Journal of Knot Theory and its Ramifications*, 2014, vol. 23, n. 9, 1450048, DOI:10.1142/S0218216514500485, [arXiv:1407.6648](#)

PAPERS IN PREPARATION

- P. Aceto, “Arborescent link concordance”
- P. Aceto, M. Golla, K. Larson and A. Lecuona, “Dehn surgeries, rational balls and cabling”
- P. Aceto, R. Pirisi, “Casson-type invariants and intersection theory”
- P. Aceto, C. Bregman, C. W. Davis, J. Park, A. Ray, “Isotopy and equivalence of knots in 3-manifolds”

INVITED TALKS

- “Rational cobordisms and integral homology”
 - **Pseudoholomorphic Curves and Gauge Theory in Low-dimensional Topology** LMS – London Mathematical Society conference, Durham, UK, August 2019
 - **School of Mathematics, Georgia Institute of Technology**, Georgia, USA, June 2019
 - **Università di Bologna**, Bologna, Italy, May 2019
 - **Twisted and quantum knot invariants** conference, Durham, UK, December 2018
 - **University of Glasgow**, Glasgow, UK, October 2018
- “Pretzel links, mutation and the slice-ribbon conjecture”
 - **Geometric structures on 3 and 4 manifolds** conference, June 2018, Dubrovnik, Croatia
 - **Université de Nantes**, Nantes, France, May 2018,
 - **Università di Pisa**, Pisa, Italy, April 2018
- “Rational homology cobordisms of plumbed manifolds and arborescent link concordance”
 - **Invariants in low dimensional topology** conference, KIAS – Korean Institute for Advanced Studies, Seoul, South Korea, May 2017
- “Knot concordance and homology sphere groups”
 - **Université de Genève**, Genève, Switzerland, March 2017

- **Université de Marseille**, Marseille, France, November 2016
- **University of Uppsala**, Uppsala, Sweden, May 2016
- “Dehn surgeries, rational balls and cabling”
- **Hausdorff Institute of Mathematics**, Bonn, Germany, October 2016

CONTRIBUTED TALKS

- “Dehn surgeries, rational balls and cabling”, **Perspectives in topology and geometry of 4-manifolds** conference, Dubrovnik, Croatia, June 2015

TALKS AT THE HOME INSTITUTION

- | | |
|----------------------|---|
| University of Oxford | <ul style="list-style-type: none"> • “Introduction to finite-type invariants” (reading seminar), February 2020 • “Smooth vs Topological knot concordances” (reading seminar), November 2019 • “Handle decomposition of rational balls and Casson-Gordon invariants”, April 2019 • “k-twist spinning and branched covers” (reading seminar), November 2018 • “Rational cobordisms and integral homology”, October 2018 |
| MPIM | <ul style="list-style-type: none"> • “Slicing obstructions via Donaldson’s Theorem” (lecture), May 2018 • “Pretzel links, mutation and the slice-ribbon conjecture”, March 2018 • “Rational homology cobordisms of plumbed manifolds”, November 2017 |
| Rényi Institute | <ul style="list-style-type: none"> • “Trisections of 4-manifolds”, March 2016 • “Symmetric ribbon disks”, February 2016 • “Dehn surgeries and rational balls”, October 2015 • “Rational homology cobordisms of plumbed manifolds and arborescent link concordance”, Oct 2015 |

CONFERENCES AND WORKSHOPS

- | | |
|-----------|---|
| Jan 2020 | Low-Dimensional Topology , CMI – Clay Mathematics Institute, Oxford, UK |
| June 2019 | Smooth concordance classes of topologically slice knots , AIM – American Institute of Mathematics, San José, California, USA |
| Feb 2018 | Knotted Embeddings in Dimensions 3 and 4 , CIRM Luminy, Marseille, France |
| Jan 2018 | Khovanov homotopy type , Rényi Institute of Mathematics, Budapest, Hungary |
| Sep 2016 | 4-manifolds and knot concordance , Max Plank Institute, Bonn, Germany |
| July 2016 | Low Dimensional Topology Summer School , CEU – Central European University, Budapest, Hungary |
| Sep 2015 | Stein Manifolds, Contact Structures and Knots , CIRM Luminy, Marseille, France |
| May 2013 | (u,v,w knots) x (topology, combinatorics, low and high algebra) , Centre for QGM, Aarhus University, Denmark |
| July 2012 | CAST – Contact And Symplectic Topology , Rényi Institute of Mathematics, Budapest, Hungary |
| May 2011 | Knots and Applications Intensive Research Period, Centro Ennio De Giorgi, Pisa, Italy |

SCIENTIFIC VISITS

- | | |
|------------|--|
| July 2019 | KIAS , Seoul, South Korea, host: <i>M. H. Kim</i> |
| June 2019 | School of Mathematics, Georgia Institute of Technology , Georgia, USA, host: <i>J. Park</i> |
| July 2018 | KIAS , Seoul, South Korea, host: <i>M. H. Kim</i> |
| Oct 2018 | University of Glasgow , Glasgow, UK, host: <i>A. Lecuona</i> |
| May 2018 | Université de Nantes , Nantes, France, host: <i>M. Golla</i> |
| April 2018 | Università di Pisa , Pisa, Italy, host: <i>P. Lisca</i> |
| Oct 2016 | Hausdorff Institute of Mathematics , Bonn, Germany, host: <i>M. Powell</i> |
| May 2016 | University of Uppsala , Uppsala, Sweden, host: <i>M. Golla</i> |
-

RESEARCH IN PAIRS AND SIMILAR PROGRAMS

- Sep 2020 P. Aceto, N. Castro, M. Miller, J. Park, A. I. Stipsicz
"Fibered ribbon knots and Casson-Gordon exotic 4-spheres" at **AIM San José**, California, USA
- Sep 2018 P. Aceto, D. Celoria and A. Lecuona
"Knot Floer homology and double branched covers of alternating knots" at **CIRM Luminy**, Marseille, France
- June 2016 P. Aceto, M. Golla and A. Lecuona
"Handle decompositions of rational balls and Casson-Gordon invariants", at **Centro Ennio De Giorgi**, Pisa, Italy

REFeree REPORTS

- Algebraic and Geometric Topology, Michigan Journal of Mathematics, Proceedings of the London Mathematical Society

TEACHING EXPERIENCE

2014-2015	Università di Pisa			
	Engineering department	Basic Mathematics (preparation for the admission test)	Lecturer	20 hours
	Engineering department	Linear Algebra	Exercise sessions	20 hours
	Biology department	Basic Mathematics	Exercise sessions	30 hours
Total: 70 hours				
2015-2016	Università di Pisa			
	Engineering department	Basic Mathematics (preparation for the admission test)	Lecturer	20 hours
	Biology department	Basic Mathematics	Exercise sessions	30 hours
Total: 50 hours				
2019-2020	University of Oxford			
	Mathematical Institute	Topology and groups	Tutor	6 hours
		Algebraic topology	Tutor	6 hours
Total: 12 hours				

LANGUAGE SKILLS

- Italian:** native
- English:** proficient

REFERENCES

- Prof. Paolo Lisca**
Università di Pisa
Dipartimento di Matematica
Largo Bruno Pontecorvo 5, 56127 Pisa, Italy
email: paolo.lisca@unipi.it
phone: +39 050 2213 319
- Prof. András I. Stipsicz**
Rényi Institute of Mathematics
Hungarian Academy of Sciences
Reáltanoda u. 13-15, H-1053 Budapest, Hungary
email: stipsicz@renyi.hu
- Prof. András Juhász**
University of Oxford
Mathematical Institute
Woodstock Road, Oxford OX2 6GG, UK
email: juhasza@maths.ox.ac.uk
phone: +44 1865 273544

CURRICULUM VITAE ET STUDIORUM

(AI FINI DELLA PUBBLICAZIONE)

ELENA ANGELINI

HONORS AND AWARDS

- September 18, 2018 – September 18, 2024
Scientific Habilitation to Associate Professor from Italian Ministry of Education, University and Research (Abilitazione Professore di II Fascia Settore Concorsuale 01/A2 – Geometria e Algebra – 2018, Quinto quadrimestre)
- April 15, 2016 – May 31, 2018
Postdoctoral Fellowship at Dipartimento di Ingegneria dell'Informazione e Scienze Matematiche, Università degli Studi di Siena, Italy (scientific advisors: professors Ilaria Cardinali and Luca Chiantini)
- September 15, 2016
Winner of an open competition based on qualifications and examinations (D.D.G. n. 106 del 23/2/2016) to teach in high school, ranking 1stbis in the result (classe di concorso A026 – Matematica)
- June 1, 2014 – April 14, 2016
Postdoctoral Fellowship at Dipartimento di Matematica e Informatica, Università degli Studi di Ferrara, Italy (scientific advisor: professor Massimiliano Mella (extended from June 1, 2015 to May 31, 2016)
- January, 2013 – July, 2013
Tirocinio Formativo Attivo in Matematica e Fisica (classe di concorso A049) at Università degli Studi di Pisa; title obtained on: July, 17 2013

EDUCATION

- January, 01 2010 – December, 31 2012
Ph.D. in Mathematics (ciclo XXV) at Dipartimento di Matematica “U. Dini”, Università degli Studi di Firenze, Italy; thesis on “The Torelli problem for Logarithmic bundles of hypersurface arrangements in the projective space”; scientific advisors: professors Giorgio Ottaviani and Daniele Faenzi; title obtained on: May, 6 2013
- October, 2007 – October, 2009
Master degree in Mathematics at Dipartimento di Matematica “U. Dini”, Università degli Studi di Firenze, Italy; thesis on “Varietà secanti alle varietà spinoriali”; scientific advisor: professor Giorgio Ottaviani; title obtained on: October 15, 2009; grade 110/110 with honour
- September, 2004 – October, 2007
Bachelor degree in Mathematics at Dipartimento di Matematica “U. Dini”, Università degli Studi di Firenze, Italy; thesis on “Il Teorema di de Rham”;

scientific advisor: professor Giorgio Ottaviani; title obtained on: October 12, 2009; grade 110/110 with honour

- September, 1999 – July, 2004
High school diploma at Liceo Scientifico Statale “Ernesto Balducci”, Pontassieve, Firenze (FI, Italy); title obtained on: July 8, 2004; grade 100/100
- May, 2003 and March, 2004
“Diplome d’études en Langue Française 1er degré” at Institut Français de Florence
- June, 2002
“Preliminary English Test” of University of Cambridge, Local Examinations Syndicate, International Examinations; grade pass

ORGANIZATIONAL EXPERIENCES

- September, 2019 →
Co-organizer, with Cristiano Bocci, Luca Chiantini, Massimiliano Mella and Giorgio Ottaviani of the cycle of seminars on “Algebraic Geometry and Applications” (system administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/GeometriaAlgebricaeApplicazioni20192020.html>)
- September, 2018 →
Co-organizer, with Cristiano Bocci, Luca Chiantini, Massimiliano Mella and Giorgio Ottaviani of the cycle of seminars on “Algebraic Geometry and Tensors” (system administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/GeometriaAlgebricaeTensori20182019.html>)
- June, 2018 – July, 2019
Co-organizer, with E. Carlini and A. Oneto, of the Mini Symposium SIAMAG “The algebra and geometry of tensors, 2: structured tensors” (MS127) held in Bern from July, 9 2019 to July, 13 2019 (<https://www.conftool.com/siamag2019/sessions.php>)
- June, 2018 →
Co-organizer, with A. Boralevi, C. Brambilla, D. Faenzi, S. Naldi and E. Rubei of the workshop GO60 that will take place in Levico (TN, Italy) from June, 22 2020 to June, 26 2020 (re-scheduled from June, 20 to June, 25 2021 due to Covid-19 health emergency) on the occasion of Giorgio Ottaviani’s 60th birthday (<http://staff.polito.it/ada.boralevi/GO60/index.html>)
- September, 2017 – August, 2018
Co-organizer, with Cristiano Bocci, Luca Chiantini, Massimiliano Mella and Giorgio Ottaviani of the cycle of seminars on “Algebraic Geometry and Tensors” (system administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/GeometriaAlgebricaeTensori20172018.html>)
- 2017
Co-organizer, with Cristiano Bocci and Giorgio Ottaviani, of the workshop “A Spring day in Projective Geometry – On the occasion of Luca Chiantini’s 60th birthday”, held at the Dipartimento di Matematica e Informatica “U. Dini”, Università degli Studi di Firenze, on May 5, 2017 (system administration and maintenance of the website

- <https://sites.google.com/unife.it/aspringdayinprojectivegeometry/home>)
- December, 2016 – May, 2017
Co-organizer, with Cristiano Bocci, Luca Chiantini, Massimiliano Mella and Giorgio Ottaviani of the cycle of seminars on “Algebraic Geometry and Tensors” (system administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/GeometriaAlgebraicaeTensori20162017.html>)
 - November, 2015 – May, 2016
Co-organizer, with Cristiano Bocci, Luca Chiantini, Massimiliano Mella and Giorgio Ottaviani of the cycle of seminars on “Real Algebraic Geometry and Tensors” (system administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/GeometriaAlgebraicaRealeeTensori20152016.html>)
 - January, 2015 – October, 2015
Co-organizer, with Cristiano Bocci, Luca Chiantini, Massimiliano Mella and Giorgio Ottaviani of the cycle of seminars on “Numerical Algebraic Geometry” (system administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/GeometriaAlgebraicaNumerica20142015.html>)
 - September, 2012 – February, 2013
Organizer of the seminars “Seminari del dottorato” at the the Dipartimento di Matematica e Informatica “U. Dini”, Università degli Studi di Firenze

SERVICE EXPERIENCES

- Editor (Curatrice editoriale) of the volumes that collect Paolo de Bartolomeis’ papers: “Matematica. Passione e conoscenza. Scritti. 1975-2016” edited by FUP (Firenze University Press), November 2019
- September, 2018 →
Reviewer for Mathematical Reviews (AMS)
- February, 2015 – April, 2016
Post-Doc representative at the Dipartimento di Matematica e Informatica, Università degli Studi di Ferrara, Italy
- September, 2013 →
Referee of international scientific journals
- December, 2011 →
System administration and maintenance of the website <http://web.math.unifi.it/gruppi/algebraic-geometry/> of the Algebraic Geometry group in Florence
- September, 9 2010 – January, 10 2011
Tutor Junior at Facoltà di Scienze Matematiche Fisiche e Naturali, Università degli Studi di Firenze

RESEARCH GROUPS MEMBERSHIP

- January, 2018 →
Participant of the Italian research program PRIN 2015 - Geometry of Algebraic Varieties (B16J15002000005), coordinator in Florence Prof. Giorgio Maria

Ottaviani

- February, 2017 →
Participant of the project “Progetto strategico di ricerca di base Anno 2014 – Azioni di gruppi su varietà e tensori”, Università di Firenze, coordinator Prof. Giorgio Maria Ottaviani
- April, 2015 →
Member of the Italian UMI
- June, 2014 – April, 2016
Participant of the Italian FAR, Università degli Studi di Ferrara, coordinator Prof. Massimiliano Mella
- January, 2012 →
Member of the Italian GNSAGA (Gruppo Nazionale per le Strutture Algebriche, Geometriche e le loro Applicazioni), sezione Geometria algebrica e algebra commutativa, of INdAM (Istituto Nazionale di Alta Matematica)
- January, 2012 – December, 2013
Participant of the Italian research program PRIN “Varietà reali e complesse: geometria, topologia e analisi armonica”, coordinator in Florence: Prof. Graziano Gentili
- January, 2010 – December, 2012
Participant of the Italian research group of MIUR “Classificazione delle varietà reali e complesse” (ex 60%), coordinators: professors Giorgio Ottaviani and Giorgio Patrizio

RESEARCH INTERESTS

ALGEBRAIC GEOMETRY

- Tensors decomposition over the complex and real field and identifiability
- Simultaneous Waring decomposition of homogeneous polynomials
- Numerical Algebraic Geometry and homotopy continuation techniques (use of softwares: Bertini, Macaulay2, Julia)
- Geometry of tensors and quantum information theory
- Birational geometry: Cremona equivalence of surfaces in P^3 and generalizations
- Torelli type problems for logarithmic bundles of hypersurfaces arrangements in the complex projective space
- Vector bundles over algebraic varieties
- Moduli spaces of vector bundles
- Secant varieties
- Defectivity problem for secant varieties

PUBLICATIONS

- E. Angelini, L. Chiantini, “Minimality and uniqueness for decompositions of specific ternary forms” (2020), submitted for publication
- E. Angelini, C. Bocci, L. Chiantini, “Catalecticant intersections and confinement of decompositions of forms” (2019), arXiv:1911.07769v2 [math.AG], accepted for publication on Journal of Symbolic Computation (special volume devoted to

MEGA 2019)

- E. Angelini, L. Chiantini, “On the identifiability of ternary forms”, *Linear Algebra and its Applications* 599 (2020), 36–65, DOI: 10.1016/j.laa.2020.03.042, SCOPUS: s2.0-85082866519, WOS: to be updated, arXiv: 1901.01796v4 [math.AG]
- E. Angelini, L. Chiantini, A. Mazzon, “Identifiability for a class of symmetric tensors”, *Mediterranean Journal of Mathematics* (2019), vol. 16 issue 4 (article 97), DOI:10.1007/s00009-019-1363-5, SCOPUS: s2.0-85067847253, arXiv: 1811.01865v2 [math.AG]
- E. Angelini, L. Chiantini, N. Vannieuwenhoven, “Identifiability beyond Kruskal’s bound for symmetric tensors of degree 4”, *Atti della Accademia Nazionale dei Lincei, Classe di Scienze Fisiche, Matematiche e Naturali, Rendiconti Lincei Matematica e Applicazioni* 29 (3) (2018), 465-485, DOI: 10.4171/RLM/817, SCOPUS: s2.0-85050017766, WOS: 000436095400005, arXiv:1712.04211v1 [math.AG]
- E. Angelini, “Waring decompositions and identifiability via Bertini and Macaulay2 softwares”, *Journal of Symbolic Computation* 91 (2019) 200-212 (special volume devoted to MEGA 2017), DOI: 10.1016/j.jsc.2018.06.021, SCOPUS: s2.0-85048989775, arXiv: 1803.00800v1 [math.AG]
- E. Angelini, C. Bocci, L. Chiantini, “Real identifiability vs complex identifiability”, *Linear and Multilinear Algebra*, volume 66, number 6 (2018), 1257-1267, DOI: 10.1080/03081087.2017.1347137, SCOPUS: s2.0-85021952299, WOS: 000429099000013, arXiv: 1608.07197v3 [math.AG]
- E. Angelini, F. Galuppi, M. Mella, G. Ottaviani, “On the number of simultaneous Waring decompositions for a generic polynomial vector” *Journal of Pure and Applied Algebra* 222 (2018), 950–965, DOI: 10.1016/j.jpaa.2017.05.016, SCOPUS: s2.0-85019627702, WOS: 000417007400012, arXiv: 1601.01869v1 [math.AG]
- E. Angelini, “On complex and real identifiability of tensors”, *Rivista di Matematica dell’Università di Parma*, volume 8, number 2 (2017), 367-377, SCOPUS: s2.0-85041207697, WOS: 000425925500012, arXiv: 1801.08311v1 [math.AG]
- E. Angelini, “Logarithmic bundles of multi-degree arrangements in P^n ”, *Documenta Mathematica* 20 (2015), 507-529, SCOPUS: s2.0-84957963600, WOS: 000366697700009, arXiv: 1410.8770v2 [math.AG]
- E. Angelini, “Logarithmic bundles of hypersurface arrangements in P^n ”, *Collectanea Mathematica*, volume 65, number 3 (2014), 285-302, DOI: 10.1007/s13348-014-0112-0, SCOPUS: s2.0-84905705702, WOS: 000340388400001, arXiv: 1304.5709v3 [math.AG]
- E. Angelini, “The Torelli problem for Logarithmic bundles of hypersurface arrangements in the projective space”, Ph. D. thesis (2013), arXiv:1506.01931v1 [math.AG], disponibile su Biblioteca Digitale Italiana di Matematica al link http://www.bdim.eu/item?id=tesi_2013_AngeliniElena_1
- E. Angelini, “Higher secants of spinor varieties”, *Bollettino U.M.I.* (9) IV (2011), 213-235, SCOPUS: s2.0-84992650871, arXiv:1011.2337v1 [math.AG]
- E. Angelini, “Varietà secanti alle varietà spinoriali”, *Tesi di laurea specialistica* (2009)

PAPERS IN PREPARATION

- E. Angelini, “Decompositions of special symmetric tensors admitting different Hilbert functions” (2020)
- E. Angelini, L. Chiantini, “Identifiability for quartics in P^4 ” (2020)

POSTERS

- E. Angelini, poster “Polinomi e identificabilità”, presented on the occasion of Unifestival, section “Cosa fanno i matematici di Unife”, Ferrara (September 25-27, 2015)
- E. Angelini, poster “The Torelli problem for Logarithmic bundles of hypersurface arrangements in the projective space”
(<http://manifolds.sns.it/2013/posters/512e7821d6b2cposterpisa.pdf>)
presented on the occasion of Workshop “Varietà reali e complesse: geometria, topologia e analisi armonica”, SNS Pisa (February 28 – March 3, 2013)
- E. Angelini, poster “Logarithmic bundles attached to arrangements of conics”, presented on the occasion of “Arrangements in Pyrénées” - School on hyperplane arrangements and related topics, Laboratoire de Mathématiques Appliquées, Université de Pau et des pays de l’Adour, (June 11 – 15, 2012)

REASEARCH PERIODS ABROAD

- March 15 - April 14, 2011
Université de Pau et des pays de l’Adour, Laboratoire de Mathématiques Appliquées CNRS – UMR 5142 IPRA, Avenue de l’Université – 64000 Pau (France), invited by professors Daniele Faenzi and Jean Vallés for research activity in algebraic geometry

INVITED TALKS

- July 11, 2019
“On the identifiability of ternary forms beyond the Kruskal’s bound”, talk given in the mini-symposium MS124 “The algebra and geometry of tensors, 1: general tensors” on the occasion of SIAMAG, Bern (Switzerland)
- April 4, 2019
“On the identifiability of symmetric tensors beyond the Kruskal’s bound”, Low-rank Optimization and Applications, Max Planck Institute für Mathematik in den Naturwissenschaften, Leipzig (Germany) (slides available at https://www.mis.mpg.de/fileadmin/pdf/slides_lroa2019_4058.pdf)
- September 12, 2018
“Tensor decomposition via Bertini software”, tutorial con problem session, Tensors – Politecnico di Torino (slides available at <https://areeweb.polito.it/disma-excellence/tensors/Angelini.rar>)

- August 14, 2018
 “Identifiability of tensors via Bertini and Macaulay2 software”, Summer School on Numerical Computing in Algebraic Geometry, Max Planck Institute für Mathematik in den Naturwissenschaften, Leipzig (Germany)
- May 18, 2018
 “Identifiability of tensors via Hilbert function analysis”, Dipartimento di Matematica e Informatica “Ulisse Dini”, Università degli Studi di Firenze (talk given in the cycle of seminars on “Algebraic Geometry and Tensors 2017-2018”)
- June 15, 2017
 “Waring decompositions and identifiability via Bertini and Macaulay2 softwares”, 14th International conference on Effective Methods in Algebraic Geometry - MEGA 2017, Castle of Nice University, campus Valrose, Nice (France) (slides available at <https://mega2017.inria.fr/files/2017/06/Angelini.pdf>)
- April 7, 2017
 “Real identifiability and complex identifiability”, Dipartimento di Matematica, Università di Bologna, Bologna (Italy) (talk given in the cycle of seminars “Algebraic Geometry and Tensors 2016-2017”, slides available at http://web.math.unifi.it/gruppi/algebraic-geometry/slides_Angelini_07042017.pdf)
- October 7, 2015
 “Results of Torelli type for logarithmic bundles of hypersurfaces in P^n ”, Dipartimento di Scienze Matematiche “G. L. Lagrange”, Politecnico di Torino, Torino (Italy)
- September 8, 2015
 “The action of the Cremona group on subvarieties of P^n ”, session S18 of Algebraic Geometry on the occasion of the XX Congresso dell’Unione Matematica Italiana, Siena (Italy)
- June 11, 2015
 “Torelli type results for logarithmic bundles of arrangements in P^n ”, Special Session 53 Vector Bundles on Projective Varieties on the occasion of the AMS-EMS-SPM International Meeting, Porto (Portugal)
- February 19, 2015
 “Scomposizione di forme binarie e utilizzo dei software Bertini e Macaulay2”, Dipartimento di Matematica e Informatica “Ulisse Dini”, Università degli Studi di Firenze, Firenze (Italy) (talk given in the cycle of seminars “Numerical Algebraic Geometry 2014-2015”)
- July 14, 2014
 “Logarithmic bundles of multi-degree arrangements in P^n ”, Summer School on “An Interdisciplinary Approach to Tensor Decomposition”, Fondazione Bruno Kessler, Povo, Trento (Italy)
- June 23, 2014
 “Logarithmic bundles of multi-degree arrangements in P^n ”, GAeL XXII, SISSA Trieste (Italy)
- June 10, 2014
 “Logarithmic bundles of multi-degree arrangements in P^n ”, Dipartimento di Matematica e Informatica, Università degli Studi di Ferrara, Ferrara (Italy)

- May 23, 2013
“Il problema di Torelli per fibrati logaritmici di configurazioni di ipersuperfici nello spazio proiettivo”, Dipartimento di Matematica e Fisica, Università Roma Tre, Roma (Italy)
- April 8, 2013
“Il problema di Torelli per fibrati logaritmici di configurazioni di ipersuperfici nello spazio proiettivo”, Dipartimento di Matematica “Ulisse Dini”, Università degli Studi di Firenze, Firenze (Italy)
- February 28 – March 3, 2013
Poster “The Torelli problem for Logarithmic bundles of hypersurface arrangements in the projective space”, Workshop “Varietà reali e complesse: geometria, topologia e analisi armonica”, SNS Pisa (Italy)
- October 18, 2012
“Fibrati logaritmici e configurazioni di ipersuperfici in $P^n(C)$ ”, Progressi Recenti in Geometria Reale e Complessa, Levico Terme, Trento (Italy)
- June 11 – 15, 2012
Poster “Logarithmic bundles attached to arrangements of conics”, in occasione di “Arrangements in Pyrénées” - School on hyperplane arrangements and related topics, Laboratoire de Mathématiques Appliquées, Université de Pau et des pays de l’Adour, Pau (France)
- June 5, 2012
“Il problema di Torelli per fibrati logaritmici di configurazioni di coniche in $P^2(C)$ ”, Dipartimento di Matematica, Università degli Studi di Parma, Parma (Italy)
- May 24, 2012
“Il problema di Torelli per fibrati logaritmici di configurazioni di coniche in $P^2(C)$ ”, Giornate di Geometria Algebrica ed Argomenti Correlati XI, Centro De Giorgi, Pisa (Italy)
- December 12, 2011
“Il Problema di Torelli per Fibrati Logaritmici”, Dipartimento di Matematica “Ulisse Dini”, Università degli Studi di Firenze, Firenze (Italy)
- March 22, 2011
“Higher secants of spinor varieties”, Laboratoire de Mathématiques Appliquées, Université de Pau et des pays de l’Adour, Pau (France)
- April 9, 2010
“Orbitopi di Carathéodory”, Dipartimento di Matematica “Ulisse Dini”, Università degli Studi di Firenze, Firenze (Italy)

WORKSHOPS AND SCHOOLS

- July 9-13, 2019
SIAM Conference on Applied Algebraic Geometry, Bern (Switzerland)
- April 1-5, 2019
Low-rank Optimization and Applications, Max Planck Institute für Mathematik in den Naturwissenschaften, Leipzig (Germany)
- September 10-14, 2018
Tensors, Politecnico di Torino

- August 13-17, 2018
Summer School on Numerical Computing in Algebraic Geometry, Max Planck Institute für Mathematik in den Naturwissenschaften, Leipzig (Germany)
- July 4 - 6, 2017
International workshop on “Quantum Physics and Geometry”, Levico Terme, Trento (Italy)
- June 21 – 23, 2017
“Modern Algebra and Classical Geometry – Together with Edoardo Sernesi”, FBK, Trento (Italy)
- June 12 -16, 2017
“MEGA 2017 – International conference on effective methods in algebraic geometry”, Université Nice Sophia Antipolis, Nice (France)
- May 5, 2017
“A Spring day in Projective Geometry – On the occasion of Luca Chiantini’s 60th birthday”, Dipartimento di Matematica e Informatica “U. Dini”, Università di Firenze, Firenze (Italy)
- April 26 – May 3, 2017
Ph. D. course “Tensor decompositions and their applications” (professor: Nick Vannieuwenhoven) held at Dipartimento di Ingegneria dell’Informazione e Scienze Matematiche, Siena (Italy)
- January 26 – 28, 2017
“Perspectives in Geometry – A conference in memory of Paolo de Bartolomeis”, Dipartimento di Matematica e Informatica “U. Dini”, Università di Firenze, Firenze (Italy)
- September 7 – 9, 2015
XX Congresso dell’Unione Matematica Italiana, Dipartimento di Ingegneria dell’Informazione e Scienze Matematiche, Siena (Italy)
- August 30 – September 4, 2015
“Classification of Projective Varieties”, conference organized by Centro Internazionale per la Ricerca Matematica (CIRM) and held at Bellavista Relax Hotel di Levico Terme, Trento (Italy)
- June 15 – 19, 2015
MEGA 2015 (Effective Methods in Algebraic Geometry), Università di Trento, Trento (Italy)
- June 15 -18, 2015
Conference AGaFe on the occasion of Philippe Ellia’s 60th birthday, Ferrara (Italy)
- June 10 -13, 2015
AMS-EMS-SPM Joint Meetings, Porto (Portugal)
- April 26-18, 2015
“Colloquium GRIFGA 2015”, Palazzo Feltrinelli – Gargnano del Garda, Brescia (Italy)
- July 13- 18, 2014
Summer School on “An Interdisciplinary Approach to Tensor Decomposition”, Fondazione Bruno Kessler, Povo, Trento (Italy)
- June 23 – 27, 2014
“GAeL XXII”, SISSA Trieste (Italy)

- September 16 – October 4, 2013
“Pragmatic 2013”, research school in Algebraic Geometry and Commutative Algebra, Catania (professors Paolo Cascini, Alessio Corti, Yujiro Kawamata)
- September 1 – 7, 2013
“Power sum decompositions and apolarity, a geometric approach” - 36th September Algebraic Geometry School (professors Giorgio Ottaviani, Kristian Ranestad, Alessandra Bernardi), school organized by the Institute of Mathematics of University of Warsaw and held in Łuków (Poland)
- February 28 – March 3, 2013
Workshop “Varietà reali e complesse: geometria, topologia e analisi armonica”, SNS Pisa (Italy)
- October 14 – 19, 2012
“Progressi Recenti in Geometria Reale e Complessa”, workshop organized by Centro Internazionale per la Ricerca Matematica (CIRM) and held at Bellavista Relax Hotel di Levico Terme, Trento (Italy)
- September 17 – 21, 2012
“School and (Workshop) on Invariant Theory and Projective Geometry” (professors Giorgio Ottaviani, Laurent Manivel), Fondazione Bruno Kessler, Povo, Trento (Italy)
- July 1 – 14, 2012
Corso Estivo di Matematica “Tensor: Waring Problems and Geometric Complexity Theory” (docenti: prof. Joseph Landsberg, prof. Massimiliano Mella) organized by Scuola Matematica Universitaria - Cortona, Palazzo della Scuola Normale Superiore (Italy)
- June 11 – 15, 2012
“Arrangements in Pyrénées” - School on hyperplane arrangements and related topics, Laboratoire de Mathématiques Appliquées, Université de Pau et des pays de l'Adour, Pau (France)
- May 23 – 26, 2012
Giornate di Geometria Algebrica ed Argomenti Correlati XI, Centro De Giorgi, Pisa (Italy)
- September 12 – 17, 2011
School and Workshop on Tropical and Toric Geometry, Università degli Studi di Trento, Trento (Italy)
- July 17 – 29, 2011
Summer Graduate Workshop “Toric Varieties in Cortona” (professors David Cox, Hal Schenck), Cortona, Palazzo della Scuola Normale Superiore (Italy)
- April 7, 2011
“Rencontres Pau – Tarbes - Toulouse de Géométrie Algébrique”, Toulouse (France)
- September 20 – 21 – 23, 2010
“Configurazioni di iperpiani e fibrati logaritmici”, course given by professor Daniele Faenzi, Dipartimento di Matematica “U. Dini”, Firenze (Italy)
- August 1 – September 3, 2010
Corso estivo di matematica organized by Scuola Matematica Interuniversitaria and held at Università di Perugia (prof. Chris Peterson – algebraic geometry;

prof. Ernst Heintze – differential geometry)

- June 3 – 5, 2010
“Journées Palloises de Géométrie algébrique”, Laboratoire de Mathématiques Appliquées, Université de Pau et des pays de l’Adour, Pau (France)
- May – June, 2009
“Geometry of varieties in spaces of tensors”, course given by professor Joseph Landsberg (Texas A&M University), Dipartimento di Matematica “U. Dini”, Firenze (Italy)

UPCOMING EVENTS

- June 22-26, 2020 (re-scheduled due to Covid-19 health emergency: June 20-25, 2021)
Participant, as organizer, to the workshop GO60 that will take place in Levico (TN, Italy) on the occasion of Giorgio Ottaviani’s 60th birthday

TEACHING EXPERIENCES

- academic year 2017-2018
Teaching assistant (with participation in the examinations committee) for the course “Algebra Lineare” (MAT/03 – Prof. Luca Chiantini), Laurea Triennale in Ingegneria Informatica e dell’Informazione – Ingegneria Gestionale (Dipartimento di Ingegneria dell’Informazione e Scienze Matematiche, Università degli Studi di Siena)
- academic year 2016-2017
Teaching assistant (with participation in the examinations committee) for the course “Algebra Lineare” (MAT/03 - Prof. Ilaria Cardinali), Laurea Triennale in Ingegneria Informatica e dell’Informazione – Ingegneria Gestionale (Dipartimento di Ingegneria dell’Informazione e Scienze Matematiche, Università degli Studi di Siena)
- academic year 2015-2016 (June, 2016 →)
Teaching assistant (with participation in the examinations committee) for the course “Algebra Lineare” (MAT/03 - Prof. Ilaria Cardinali), Laurea Triennale in Ingegneria Informatica e dell’Informazione – Ingegneria Gestionale (Dipartimento di Ingegneria dell’Informazione e Scienze Matematiche, Università degli Studi di Siena)
- academic year 2015-2016 (September, 2015 – April, 2016)
Teaching assistant the course “Geometria” (MAT/03 – Prof. Rossana Chiavacci), Laurea Triennale in Fisica (Dipartimento di Fisica e Scienze della Terra, Università degli Studi di Ferrara)
- academic year 2014-2015 (October, 2014 – June, 2015)
Teaching assistant the course “Geometria” (MAT/03 – Prof. Rossana Chiavacci), Laurea Triennale in Fisica (Dipartimento di Fisica e Scienze della Terra, Università degli Studi di Ferrara)
- September 28, 2013 – May 31, 2014
Computer Science teacher in high school (classe di concorso A042) at Istituto d’Istruzione Superiore “Giotto Ulivi”, Borgo San Lorenzo (FI)
- April, 2013 – June, 2013

- Stage (TFA - classe di concorso A049) at Liceo Scientifico Statale “Guido Castelnuovo”, Firenze (FI), tutor Prof. Franco Fusier
- January 15, 2013 – June 30, 2013
Computer Science teacher in high school (classe di concorso A042) at Istituto d’Istruzione Superiore “Giotto Ulivi”, Borgo San Lorenzo (FI)
 - academic year 2012-2013
Teaching assistant for the course “Geometria I” (MAT/03 - professors Graziano Gentili, Marco Maggesi), Laurea Triennale in Matematica (Facoltà di Scienze Matematiche Fisiche e Naturali, Università degli Studi di Firenze)
 - March, 2012
Openlab activities at Scuola dell’Infanzia “Azzurra”, Sesto Fiorentino (FI)
 - February, 2012
Openlab Activities at Scuola Primaria “Padre Ernesto Balducci”, Sesto Fiorentino (FI) and at Istituto di istruzione statale superiore “Ernesto Balducci”, Pontassieve (FI)
 - January, 2012
Openlab Activities at Istituto di istruzione statale superiore “Ernesto Balducci”, Pontassieve (FI)
 - November, 2011
Openlab Activities at Scuola Media Statale “Cavalcanti”, Sesto Fiorentino (FI)
 - March, 2011
Openlab Activities at Scuola Media Statale “Giovanni della Casa”, Borgo San Lorenzo (FI)
 - December, 2010
Tutor activities for 1st year students of Mathematics and Computer Science at Dipartimento di Matematica “Ulisse Dini” as Tutor Junior at Facoltà di Scienze Matematiche Fisiche e Naturali, Università degli Studi di Firenze
 - academic year 2010-2011 (October 4, 2010 – December 17, 2010)
Instructor for the course “Matematica integrativa del calcolo differenziale con applicazioni (MAT/05)”, Laurea in Scienze forestali e ambientali (Facoltà di Agraria, Università degli Studi di Firenze)

LANGUAGE SKILLS

- | | |
|---------|------------------|
| ITALIAN | ▪ Native speaker |
| ENGLISH | ▪ Excellent |
| FRENCH | ▪ Excellent |

COMPUTER SKILLS

- Microsoft Office package (Word, Excel, PowerPoint, Publisher, Access, Outlook, OneNote) and equivalent open-source packages
- Latex, Scientific Work Place
- Bertini, Macaulay2, Magma, Maple, Matlab, Julia
- Geogebra
- HTML programming language

Federico Bambozzi

Personal information

- *Data and place of birth:* July 9, 1985, Loreto (AN), Italy.
- *Nationality:* Italian.
- *Residence:* Windmill Road 20, OX3 7BX, Oxford, United Kingdom.
- *Place of Work:* Mathematical Institute of the University of Oxford, in Oxford, United Kingdom.
- *Current Position:* DFG fellow with the project BA 6560 / 1-1 entitled "Derived geometry and arithmetic" .
- *Personal Phone:* +49 176 28726535.
- *Email:* bambozzif@maths.ox.ac.uk and f.bambozzi@gmail.com

Academic achievements

- 04/2014: Ph.D. in Mathematics at "Università degli studi di Padova" under the supervision of prof. Francesco Baldassarri, with thesis entitled "*On a generalization of affinoid varieties*".
- 07/2010: Master's degree in Mathematics at "Università degli studi di Torino" with thesis entitled "*Fourier analysis in L-function theory*", supervisor Prof. Andrea Mori.
- 07/2007: Bachelor degree in Electronic Engineering at "Università politecnica delle Marche", with thesis entitled "*On a Family of Circulant Matrices for QC-LDPC Codes*", supervisor Prof. Franco Chiaraluce.

Professional activities

- from 12/2018 to 11/2020: DFG fellow at the Mathematical Institute of the University of Oxford with the project BA 6560 / 1-1 entitled "Derived geometry and arithmetic";
- from 01/2017 to 09/2018: Post-doc fellowship at the University of Regensburg supported by the DFG funded CRC 1085 "Higher Invariants. Interactions between Arithmetic Geometry and Global Analysis", with advisor Prof. Denis-Charles Cisinski;
- from 10/2014 to 11/2016: Post-doc fellowship at the University of Regensburg supported by the DFG funded CRC 1085 "Higher Invariants. Interactions between Arithmetic Geometry and Global Analysis", with advisors Prof. Walter Gubler and Prof. Klaus Künnemann;

- from 05/2014 to 09/2014: “Assegno di ricerca” (Italian equivalent of a post-doc fellowship) at University of Padova, founded by MIUR PRIN2010-11 “Arithmetic Algebraic Geometry and Number Theory”, under the supervision of Prof. Bruno Chiarellotto.

Publications

- F. Bambozzi, O. Ben-Bassat, K. Kremnizer “*Analytic Geometry over \mathbb{F}_1 and the Fargues-Fontaine curve*”, *Advances in Mathematics*, Volume 356, 7 November 2019.
- F. Bambozzi, A. Vezzani “*Rigidity for rigid analytic motives*”, *Journal of the Institute of Mathematics of Jussieu* (2019): 1-29.
- F. Bambozzi, S. Murro, N. Pinamonti “*Invariant states on noncommutative tori*”, 2019, to appear on *International Mathematics Research Notice*.
- F. Bambozzi “*Theorems A and B for dagger quasi-Stein spaces*”, *The Quarterly Journal of Mathematics*, Volume 70, Issue 2, June 2019, Pages 703–735.
- F. Bambozzi, O. Ben-Bassat, K. Kremnizer “*Stein domains in Banach algebraic geometry*”, *Journal of Functional Analysis*, Volume 274, Issue 7, 1 April 2018, Pages 1865-1927.
- F. Bambozzi, “*Closed graph theorems for bornological spaces*”, *Khayyam Journal of Mathematics*, Volume 2, Issue 1, 2016, Page 81-111.
- F. Bambozzi, O. Ben-Bassat, “*Dagger Geometry as Banach Algebraic Geometry*”, *Journal of Number Theory* 162 (2016): 391-462.
- M. Baldi, F. Bambozzi, F. Chiaraluce, “*On a Family of Circulant Matrices for Quasi-Cyclic Low-Density Generator Matrix Codes*”, *IEEE transactions on Information Theory*, September 2011, volume 57, number 9. Available at <http://arxiv.org/pdf/1309.1286.pdf>
- M. Baldi, F. Bambozzi, F. Chiaraluce. “*A class of invertible circulant matrices for QC-LDPC code*”. *Proc. International Symposium on Information Theory and its Applications, ISITA 2008, Auckland, New Zealand, 7-10 December 2008*, pp. 223-228, ISBN: 978-1-4244-2069-8, DOI: 10.1109/ISITA.2008.4895413.

Preprints

- F. Bambozzi, S. Murro “*On the uniqueness of invariant state*”, June 2019, available at preprint available at <https://arxiv.org/pdf/1906.09766.pdf>
- From June 2016 a new version of my Ph.D. thesis is available on arXiv at the link <http://arxiv.org/pdf/1401.5702.pdf> and it has been submitted for publication as monography.

Teachings

- Part C/OMMS supervisor for master students of the University of Oxford with a dissertation on Berkovich spaces.
- Teaching for a cycle of student seminars entitled “Non-Archimedean analysis” at Universität Regensburg in the winter term of 2014/2015, for 20 hours of teaching.
- Tutoring for the course of Mathematics of the Bachelor in “Facoltà di Agraria” of “Università degli studi di Padova”(20 hours of tutoring) in 2013.

Talks

Invitation to conferences

- 13/09/2019: Invited speaker at “Intercity seminar on Arakelov geometry” in Kyoto with a talk entitled *Analytic motivic sheaves over \mathbb{Z}* ..
- 06/06/2019: Speaker at the “INdAM Program on Serre Conjectures and the p-adic local Langlands program” in Padova with a talk entitled *“A global perspective on Hodge Theory”*. Video available at https://mediaspace.unipd.it/playlist/dedicated/119214951/1_d8zm99gi/1_4p4763qu
- 08/09/2017: Invited speaker at “Intercity seminar on Arakelov geometry” in Beijing with a talk entitled *“Analytic geometry over \mathbb{F}_1 and applications”*.
- 31/07/2017: Invited speaker at the workshop entitled “Non-Archimedean and Tropical Geometry”, at Universität Regensburg, with an introductory lecture on Berkovich Spaces.
- from 13/12/2015 to 19/12/2015: participation at the workshop 1551 of the Mathematisches Forschungsinstitut of Oberwolfach, entitled *“Non-Archimedean Geometry and Applications”*.
- 23/06/2015: Speaker at the workshop entitled “Analytic and Arithmetic Geometry”, held at the Mathematical Institute of the University of Oxford with a talk entitled *“Quasi-abelian categories in analytic geometry”*.
- 10/09/2014: Invited speaker at “Intercity seminar on Arakelov geometry” in Rome, with a talk entitled *“Dagger analytic geometry”*.

Talks in Universities

- 16/05/2019: Seminar at the Institut Fourier in Grenoble entitled *“Analytic spaces over \mathbb{Z} and Hodge Theory”*.
- 06/07/2018: Seminar at the Mathematisches Institut of Universität Freiburg with the title *“The Rigidity Theorem for motives of non-Archimedean analytic spaces”*.
- 23/02/2018: Seminar at the Mathematical Institute of the University of Oxford with the title *“Derived analytic geometry over \mathbb{F}_1 and p-adic Hodge Theory”*.

- 24/04/2017: Seminar at Institut de Mathematiques Jussieu with the title "*Analytic geometry over \mathbb{F}_1 and applications*" in the cycle of seminars of Algebraic analysis.
- 07/01/2016: Talk at the "Oberseminar Arithmetische Geometrie" at Universität Regensburg with the title "*Foundations of derived analytic geometry*".
- 09/06/2015: Seminar at Universität Regensburg with the title "*Quasi-abelian categories in analytic geometry*".
- 09/03/2015: Seminar at the University of Padova with the title "*Dagger Geometry as Banach Algebraic Geometry*".
- 10/12/2014: Seminar at the Humboldt University of Berlin with title "*Analytic spaces and relative algebraic geometry on quasi-abelian categories*".
- 17/11/2014: Seminar at the Institut de Mathematiques Jussieu with title "*Dagger analytic geometry*" in the cycle of seminars of Algebraic analysis.
- 15/04/2014: Seminar at Universität Regensburg with title "*Dagger geometry*".

Visiting periods

- Visit at the Mathematisches Institut Universität Freiburg, invited by Simone Murro from 14/10/2018 to 03/11/2018.
- Long Visit at the Institute of Mathematics of the University of Oxford. Invited by Prof. Yakov Kremnizer from 01/02/2017 to 31/03/2017.
- In several occasions I have been invited by Prof. Yakov Kremnizer at the Institute of Mathematics of the University of Oxford for short visits: from 17/09/2018 to 29/09/2018, from 18/02/2018 to 03/03/2018, 24/09/2017, from 24/09/2017 to 14/10/2017, from 18/09/2016 to 01/10/2016, from 13/03/2016 to 19/03/2016 and from 11/06/2015 to 25/06/2015.

Organization of conferences

- Organization of the workshop entitled "Algebraic and Geometric aspects in Quantum Field Theory", 16-18 April 2019, Universität Freiburg.

Peer-review activity

I am or I have been active as referee for following journals:

- Algebra and Number Theory;
- the Journal of Number Theory;
- the Quarterly Journal of Mathematics;

- Advances in Operator Theory;
- Rendiconti del Seminario Matematico della Università di Padova;
- Operators and matrices;
- FILOMAT;
- Annals of Mathematics and Physics;
- Mathematical and Computational Applications;
- Far East Journal of Mathematical Sciences.

Scientific activity

Research interests

- Berkovich, Huber analytic spaces and the global analytic spaces of Poineau.
- Stein and compact Stein spaces in complex and non-Archimedean geometry and related notions.
- Bornological algebraic structures and their use in geometry and functional analysis.
- Derived geometry in broad sense, both algebraic and analytic.
- Exact categories and in particular quasi-Abelian categories.
- Geometry over \mathbb{F}_1 and its applications to arithmetic, to L-function theory and Langlands program.
- Tropical geometry and its relations with analytic geometry.
- Homotopy theory and Ayoub motives in non-Archimedean Geometry.
- Rigid cohomology and p -adic differential equations.
- Non-commutative geometry and $*$ -algebras.

Current research projects

My current research is focused on three main lines of research.

Analytic motivic sheaves and motives

In my collaboration with prof. Kobi Kremnizer I am studying motivic sheaves over analytic spaces in the broad sense we previously defined. We are defining the categories of motivic sheaves $\mathbf{DA}_{\mathbb{A}_S^1}(S, \Lambda)$ for any analytic space and any coefficient ring Λ . The new categories we are defining give rise to new variations of motivic cohomologies that we think are related to semi-topological K -theory and Deligne cohomology.

In parallel, we are studying the p -adic realizations of motives of arithmetic varieties from a global perspective using a global version of the Robba ring.

Global analytic spaces

The new way of thinking to analytic spaces we developed in our previous works leads to new way of thinking to quasi-coherent sheaves and to more general analytification functors. In particular, we can introduce a new notion of quasi-coherent sheaf over analytic spaces that fixes the problems that previous (unsatisfying) proposed notions have. Also, having at our disposal a notion of analytification functor for any bornological ring, it is natural to ask if the GAGA principle still holds in this more general setting. I think to be able to prove a broad generalization of the known GAGA theorems.

Non-commutative geometry and arithmetic

In collaboration with Simone Murro I am able to describe some C^* -dynamical systems whose partition function is the Hasse-Weil zeta function of an arithmetic scheme. This generalizes the notion of Bost-Connes system, that only works in the case where the arithmetic scheme is zero dimensional.

Gabriele Benedetti – Curriculum Vitae

<i>Work address:</i>	Universität Heidelberg Mathematisches Institut 3/402 Im Neuenheimer Feld 205 69120 Heidelberg	<i>Phone:</i>	+49 6221 54-14228 / +49 151 65715433
		<i>E-mail:</i>	gbenedetti@mathi.uni-heidelberg.de
		<i>Web:</i>	mathi.uni-heidelberg.de/~gbenedetti
<i>Private address:</i>	Zeppelinstraße 47 69121 Heidelberg	<i>Birthdate:</i>	16/06/1987
		<i>Nationality:</i>	Italian
		<i>Sex:</i>	Male

Research Areas

- Symplectic Geometry	- Hamiltonian Dynamics	- Calculus of Variation
- Floer Theory		- Magnetic Systems

Academic Career

May 2018 – Sep 2024 **Juniorprofessor – Ruprecht-Karls-Universität Heidelberg**
Leader of the *Symplectic Geometry* group together with Prof. Peter Albers.

Aug 2018 – Dec 2018 **Postdoctoral Fellow – MSRI** (on leave from the University of Heidelberg)
Research program *Hamiltonian Systems, from Topology to Applications through Analysis*.

Jul 2016 – Apr 2018 **Academic Assistant – Universität Leipzig**
Member of the *Differential Geometry* group. Leader: Prof. Hans-Bert Rademacher.

Sep 2014 – May 2016 **Postdoctoral Fellow – Westfälische Wilhelms-Universität Münster**
Member of the *Symplectic Geometry* group within the research program *SFB 878: Groups, Geometry & Actions*. Leaders: Prof. Peter Albers, Prof. Kai Zehmisch.

Education

24th Oct 2015 **PhD – University of Cambridge.**
- *Thesis:* The contact property for magnetic flows on surfaces.
- *Advisor:* Prof. Gabriel P. Paternain.
- *Sponsored by:* External Research Scholarship, Trinity College, 2011 – 2014.

12th Jun 2012 **Diploma – Scuola Normale Superiore di Pisa. 70/70 cum laude.**
- *Dissertation:* Exact magnetic flows on closed orientable surfaces.
- *Sponsored by:* Student scholarship, 2006 – 2011.

30th Sep 2011 **Master in Mathematics – Università di Pisa. 110/110 cum laude.**
- *Thesis:* An approach to the Weinstein conjecture via holomorphic curves.
- *Advisor:* Prof. Alberto Abbondandolo.

24th Jul 2009 **Bachelor in Mathematics – Università di Pisa. 110/110 cum laude.**
- *Thesis:* The Peter–Weyl theorem.
- *Advisor:* Prof. Fulvio Ricci.

Funding

- 2021 – 2024 Application for a PhD position in the research proposal *SFB/TRR 191* (submitted).
 2020 Lump sum of *SFB/TRR 191*: hiring of one postdoc (70 000 Euros).
 2021 Host of Prof. Jungsoo Kang, *Humboldt Research Fellowship for Experienced Researchers*.
 2020 – 2026 Associated member of *Excellence Cluster STRUCTURES*.
 2018 – 2021 Associated member of *GRK 2229 Asymptotic Invariants and Limits of Groups and Spaces*.
 2018 – 2020 Associated member of *SFB/TRR 191 Symplectic Structures in Geometry, Algebra and Dynamics*.

Collaborators

- | | |
|--|--|
| - Alberto Abbondandolo (<i>Ruhr-Universität Bochum</i>) | - Alexander F. Ritter (<i>University of Oxford</i>) |
| - Luca Asselle (<i>Justus-Liebig-Universität Gießen</i>) | - Iskander A. Taimanov (<i>Novosibirsk State University</i>) |
| - Jungsoo Kang (<i>Seoul National University</i>) | - Kai Zehmisch (<i>Ruhr-Universität Bochum</i>) |
| - Marco Mazzucchelli (<i>ENS Lyon</i>) | |

Organization of Conferences and Seminars

- 19th – 22th Jan 2020 School *The Implicit Function Theorem in Geometry and Dynamics*, University of Gießen.
 Since Apr 2018 *BACH Symplectic and Contact Geometry Seminar* (Bochum-Aachen-Cologne-Heidelberg).
 Since Apr 2018 Research seminar *Symplectic Geometry and Geometry*, University of Heidelberg.
 9th – 13th Jul 2018 Conference *Symplectic Dynamics*, University of Heidelberg.

Refereeing

- Reviewer for MathSciNet Mathematical Reviews (11 entries).
 Referee for
- Annals of Global Analysis and Geometry
 - Bulletin of the London Mathematical Society
 - Communications in Contemporary Mathematics
 - Ergodic Theory and Dynamical Systems
 - Journal of Differential Equations
 - Journal of the European Mathematical Society
 - Journal of Modern Dynamics
 - Journal of Topology and Analysis
 - Manuscripta Mathematica
 - Nonlinearity
 - Proceedings of the American Mathematical Society
 - Transactions of the American Mathematical Society
- Master thesis Xinyi Xie, *Evolvente und Evolute einer Kurve im \mathbb{E}^n* . Leipzig, 2017.
 PhD Thesis Amin Mohebbi, *The ECH capacities of the rotating Kepler problem*. Augsburg, 2020.

Further Training

- 2019 Management Program, *Auf dem Weg zur Professur*, University of Heidelberg.

Invited Talks

- | | |
|------|--|
| 2020 | <ul style="list-style-type: none"> - <i>Systolic inequalities: from Riemannian and convex geometry to symplectic geometry.</i>
DD & GT Seminar, University of Utrecht, Amsterdam and Leiden. - <i>On the local systolic optimality of Zoll contact forms.</i>
CAST Workshop 2020, University of Antwerp. |
| 2019 | <ul style="list-style-type: none"> - <i>Periodic motions of a charged particle in a stationary magnetic field.</i>
Oberseminar Geometrie und Analysis, University of Aachen. - <i>Zoll magnetic systems on surfaces.</i>
Workshop on Conservative Dynamics and Symplectic Geometry, IMPA, Rio de Janeiro. - <i>A magnetic systolic inequality on surfaces.</i>
Multiple perspectives on geometric inequalities, CRM, Barcelona. - <i>A local systolic inequality for odd-symplectic forms on circle bundles.</i>
Symplectix Seminaire, IHP, Paris. |
| 2018 | <ul style="list-style-type: none"> - <i>Systolic inequalities in contact and symplectic geometry.</i>
Northern California Symplectic Geometry Seminar, Berkeley. - <i>Systolic inequalities in contact and symplectic geometry.</i>
Symplectic Geometry Seminar, IAS - Princeton University. - <i>The magnetic systolic inequality.</i>
40. Süddeutsches Kolloquium über Differentialgeometrie, Heidelberg. - <i>A local contact systolic inequality in dimension three and an application to magnetic flows.</i>
Symplectic Geometry Seminar, ETH, Zurich. - <i>A local systolic inequality for odd-symplectic forms.</i>
Workshop on Symplectic Dynamics, SNU, Seoul. |
| 2017 | <ul style="list-style-type: none"> - <i>Systolic inequalities in contact and symplectic geometry.</i>
Conference on Hamiltonian Systems (in memory of J. Mather), Monte Verità, Ascona. - <i>Systolic inequalities in contact and symplectic geometry.</i>
GIF Workshop - Floer homology and contact topology, University of Haifa. - <i>Systolic inequalities in contact and symplectic geometry.</i>
Workshop on Conservative Dynamics and Symplectic Geometry, IMPA, Rio de Janeiro. - <i>Systolic inequalities in contact and symplectic geometry.</i>
Hamiltonian and Reeb Dynamics: New Methods & Applications, Lorentz Center, Leiden. |
| 2016 | <ul style="list-style-type: none"> - <i>Systolic inequalities in contact and symplectic geometry.</i>
Geometry and Topology Seminar, MIT, Cambridge. - <i>The Bangert waist theorem for magnetic flows.</i>
Bochum-Dortmund joint Differential Geometry Seminar. |
| 2015 | <ul style="list-style-type: none"> - <i>The Lusternik-Fet theorem for magnetic flows.</i>
Non-linear Analysis Seminar, Gdańsk University of Technology. |
| 2014 | <ul style="list-style-type: none"> - <i>Contact property and symplectic cohomology of non-exact magnetic flows on the two-sphere.</i>
Symplectic Geometry Seminar, WWU Münster. - <i>Contact property and symplectic cohomology of non-exact magnetic flows on the two-sphere.</i>
Differential Geometry Seminar, University of Cambridge. - <i>Contact property and symplectic cohomology of non-exact magnetic flows on the two-sphere.</i>
Seminario di Analisi e Sistemi Dinamici, Università degli Studi Roma 3. |
| 2013 | <ul style="list-style-type: none"> - <i>Contact property of symplectic magnetic flows on the two-sphere.</i>
Algebraic and Symplectic Geometry Seminar, University of Oxford. - <i>Contact property of symplectic magnetic flows on the two-sphere.</i>
Séminaire de géométrie et dynamique, ENS Lyon. |

Publications

- Accepted *On a local systolic inequality for odd-symplectic forms* (with J. Kang),
Portugaliae Mathematica, arXiv:1902.01261, 52 pages.
- Invariance of symplectic cohomology and twisted cotangent bundles over surfaces* (with A. F. Ritter),
International Journal of Mathematics, arXiv:1807.02086, 42 pages.
- A local contact systolic inequality in dimension three* (with J. Kang),
Journal of the European Mathematical Society, arXiv:1902.01249, 43 pages.
- 2020 *Integrable magnetic flows on the two-torus: Zoll examples and systolic inequalities* (with L. Asselle),
Journal of Geometric Analysis (2020), doi:10.1007/s12220-020-00379-1, 17 pages.
- 2019 *Minimal boundaries in Tonelli Lagrangian systems* (with L. Asselle and M. Mazzucchelli),
International Mathematical Research Notices (2019), doi:10.1093/imrn/rnz246, 42 pages.
- 2017 *The multiplicity problem for periodic orbits of magnetic flows on the 2-sphere*
(with A. Abbondandolo, L. Asselle, M. Mazzucchelli, and I. A. Taimanov),
Advanced Nonlinear Studies 17 (2017), no. 1, 17–30.
- On the periodic motions of a charged particle in an oscillating magnetic field on the two-torus*
(with L. Asselle),
Mathematische Zeitschrift 286 (2017), no. 3-4, 843–859.
- 2016 *On closed orbits for twisted autonomous Tonelli Lagrangian flows*,
Proceedings of the CIMPA Research School "Hamiltonian and Lagrangian Dynamics",
Publicaciones Matemáticas del Uruguay 16 (2016), 41–79.
- Magnetic Katok examples on the two-sphere*,
Bulletin of the London Mathematical Society 48 (2016), no. 5, 855–865.
- The Lusternik-Fet theorem for autonomous Tonelli Hamiltonian systems on twisted cotangent bundles*
(with L. Asselle),
Journal of Topology and Analysis 8 (2016), no. 3, 545–570.
- The contact property for symplectic magnetic fields on S^2* ,
Ergodic Theory and Dynamical Systems 36 (2016), no. 3, 682–713.
- 2015 *On the existence of periodic orbits for magnetic systems on the two-sphere* (with K. Zehmisch),
Journal of Modern Dynamics 9 (2015), 141–146.
- Infinitely many periodic orbits of non-exact oscillating magnetic fields on surfaces with genus at least two for almost every low energy level*
(with L. Asselle),
Calculus of Variations and Partial Differential Equations 54 (2015), no. 2, 1525–1545.
- 2014 *The contact property for magnetic flows on surfaces* (PhD Thesis),
University of Cambridge.

Submitted Manuscripts

- 2020 *Normal forms for strong magnetic systems on surfaces: trapping regions and rigidity of Zoll systems*
(with L. Asselle),
arXiv:2003.09141, 19 pages.
- 2019 *On the local systolic optimality of Zoll contact forms* (with A. Abbondandolo),
arXiv:1912.04187, 56 pages.
- On a systolic inequality for closed magnetic geodesics on surfaces* (with J. Kang),
arXiv:1902.01262, 26 pages.

Lectures and Seminars

- Spring 2020
Heidelberg - **Variational Methods for Convex Hamiltonian Systems**,
Master seminar, 13 talks.
- Mar - Apr 2020
Lahore - **Introduction to Complex Analysis (Part 2)**,
Online lecture series with Alberto Abbondandolo, International Mathematics Master.
- Fall 2019/2020
Heidelberg - **Differential Geometry II**,
Master lecture, 4 hours per week, with lecture notes. Exercises by Dr. Kevin Wiegand.
- Spring 2019
Heidelberg - **Differential Geometry I**,
Bachelor Lecture, 4 hours per week, with lecture notes. Exercises by Dr. Urs Fuchs.
- Fall 2018/2019
Heidelberg - **Integrable Systems and KAM Theory**,
Master seminar, 14 talks, with lecture notes of the students.
- Spring 2018
Heidelberg - **Geometry of Celestial Mechanics**,
Master Lecture, 4 hours per week, with lecture notes.
- Sep 2016
Leipzig - **Preparatory Course in Mathematics**,
Intensive course for teachers, 2 hours every day for 2 weeks, with lecture notes.

Exercise Classes and Tutoring

- Fall 2017/2018
Leipzig - *Differential Geometry 1*. Lecturer: Prof. Hans-Bert Rademacher.
- *Basics of Mathematics*. Lecturer: Steffen Hintze.
- Spring 2017
Leipzig - *Advanced Geometry*. Lecturer: Prof. Friedbert Prüfer.
- Fall 2016/2017
Leipzig - *Differential Geometry 1*. Lecturer: Prof. Friedbert Prüfer.
- *Analysis 3 (Mass and Integration)*. Lecturer: Prof. Hans-Bert Rademacher.
- Fall 2015/2016
Münster - *Analysis 1*. Lecturer: Prof. Peter Albers.
- Fall 2012/2013
Cambridge - *Differential Geometry*. Lecturer: Prof. Mihalis Dafermos.
- 2011 – 2014
Cambridge - Tutor for the Bachelor lectures *Metric & Topological Spaces*, *Analysis II*, *Geometry 1B*,
Differential Geometry. Coordinator: Prof. Imre Leader.

Minicourses

- Feb 2018 *Systolic inequalities in contact and symplectic geometry*, Graduate winter school in Hamiltonian dynamics and symplectic topology. University of Padova.
- Mar 2015 *On closed orbits for twisted autonomous Tonelli Lagrangian flows*, CIMPA Research School "Hamiltonian and Lagrangian Dynamics". CMAT, Universidad de la República, Uruguay.

Outreach

- 2019 Tutor for the *Mathematics Route* for kids during the *Day of Mathematics*. Heidelberg.
- 2011 Seminar *Mathematical Billiards* for high school students during the *Week of Mathematics*. Coordinator: Prof. Alberto Abbondandolo. Università di Pisa.

Supervision of Students and Postdocs at the University of Heidelberg

Postdoc

Jan–Dec 2020 Amin Mohebbi, *Magnetic deformations of the Kepler problem.*

PhD

Since Jan 2020 Johanna Bimmermann, *The relative HZ-capacity in two degrees of freedom.*

Since Sep 2019 Valerio Assenza, *On the curvature of magnetic flows.*

Since Apr 2018 Anna-Maria Vocke, *Tonelli billiards.* Co-advisor: Prof. Peter Albers.

Master

Since Feb 2020 Raphael Schlarb, *The twist condition for strong magnetic fields on the two-sphere.*

May 2020 Davide Legacci, *Hamiltonian evolutionary dynamics.* Co-advisor: Prof. Kurt Roth.

Dec 2019 Johanna Bimmermann, *HZ capacity for magnetic systems on the two-sphere.*

Bachelor

Since Feb 2020 Christian Alber, *The Blaschke conjecture and Hopf rigidity on surfaces.*

Since Feb 2020 Jonas von Berg, *Singularity Theorems in GR.* Co-advisor: Prof. Matthias Bartelmann.

Aug 2019 Johannes Wenzel, *Die Dynamik von Kreisdiffeomorphismen.*

June 11, 2020

Barbara Bolognese

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Room 201
Università di Roma Tre
Palazzina C
Largo San Leonardo Murialdo 1
00154 Roma

E-mail Address

barbara.bolognese@uniroma3.it

Personal Website

www.barbarabolognese.weebly.com

EDUCATION

PHD, Mathematics

Northeastern University, Boston, MA

May 2016

Thesis: *Two results on divisors on moduli spaces of sheaves on algebraic surfaces: generic Strange Duality on abelian surfaces and Nef cones of Hilbert schemes of points on surfaces with irregularity zero.*

Thesis advisor: ALINA MARIAN

DIPLOMA, Piano Performing

Conservatorio di Musica “Luisa D’Annunzio”, Pescara, Italy

October 2012

MSC, Mathematics

Università degli studi di Roma “La Sapienza”, Rome, Italy

July 2011

Thesis: *Bridgeland stability conditions on varieties with trivial canonical bundle and Fourier-Mukai transforms.*

Thesis advisor: ENRICO ARBARELLO

BSC, Mathematics

Università degli studi di Roma “La Sapienza”, Rome, Italy

October 2009

Thesis: *Vector bundles and characteristic classes* (in Italian)

Thesis advisor: ENRICO ARBARELLO

POSITIONS

CURRENT:

POSTDOCTORAL ASSOCIATE, University of Roma Tre, Rome, Italy

December 2019 - November 2021

PAST:

RESEARCH ASSOCIATE, University of Sheffield, Sheffield, UK

January 2017 - November 2019

POSTDOCTORAL FELLOW, Fields Institute, Toronto, ON, Canada

July - December 2016

RESEARCH INTERESTS

My research mainly focuses on Bridgeland stability, moduli spaces of sheaves and moduli spaces of Bridgeland

stable complexes on algebraic surfaces. I am especially interested in their geometric features, such as their Picard groups and their birational geometry. I am also interested in the properties of the stability manifold of a triangulated category. Some of my works also include contributions to the tropical geometry of curves and surfaces, and to the combinatorial properties of some graphs coming from an algebro-geometric setting.

PREPRINTS

1. B. Bolognese, *A local compactification of the Bridgeland stability manifold*. [arXiv:2006.04189](#)

PUBLICATIONS

1. B. Bolognese, M. Brandt, L. Chua, *From Curves to Tropical Jacobians and Back*. In: Smith G., Sturmfels B. (eds) *Combinatorial Algebraic Geometry*. Fields Institute Communications, vol 80. Springer, New York, NY (2017).
2. B. Bolognese, C. Harris, J. Jelisiejew, *Equations and Tropicalization of Enriques Surfaces*. In: Smith G., Sturmfels B. (eds) *Combinatorial Algebraic Geometry*. Fields Institute Communications, vol 80. Springer, New York, NY (2017).
3. B. Bolognese, J. Huizenga, Y. Lin, E. Riedl, B. Schmidt, M. Woolf, X. Zhao, *Nef cones of Hilbert schemes of points*. *Algebra & Number Theory* 10 (4), 907-930 (2016).
4. B. Benedetti, B. Bolognese, M. Varbaro, *Regulating Hartshorne's connectedness theorem*, *J Algebr Comb* (2017) 46: 33. <https://doi.org/10.1007/s10801-017-0744-8>.
5. B. Bolognese, A. Marian, D. Oprea and K. Yoshioka: *On the strange duality conjecture for abelian surfaces II*, *J. Algebraic Geom.* 26 (2017), 475-511.

TALKS

INVITED TALKS IN CONFERENCES:

1. VBAC Conference 2021 at Salamanca, June 13-17. Talk *TBA*.
2. Giornate di Geometria Algebrica, Gargnano sul Garda, June 2021. Talk *TBA*.
3. Università di Bologna, sede di Ravenna, Workshop "EXARCHOS", January 22nd-24th 2020. Talk *A partial compactification of the stability manifold*.
4. Fields Institute, Retrospective Workshop on Combinatorial Algebraic Geometry, June 18th - 22nd 2018. Talk *On the connectivity of dual graphs of projective curves*.
5. INdAM, Conference "Birational Geometry and Moduli Spaces", June 11th-15th 2018. Talk *Nef cones of Hilbert schemes of points via Bridgeland stability*.
6. University of Loughborough, LMS Regional Meeting and Workshop, September 18th-21st 2017. Talk *Nef cones of Hilbert schemes of points via Bridgeland stability*.
7. University of Oxford, COW (Cambridge, Oxford and Warwick) meeting, March 9th 2017. Talk *Strange Duality on abelian surfaces*.
8. CMS Winter Meeting at Niagara Falls, Section on Combinatorial Algebraic Geometry, December 4th, 2016. Talk *On the connectivity of dual graphs of projective curves*.
9. University of Rome "La Sapienza", Conference "Algebraic Geometry and Representation Theory in Rome", December 21st-23rd, 2015. Talk *Strange duality on algebraic surfaces*.

INVITED MINI-COURSES IN CONFERENCES:

1. April 2018: *Bridgeland Stability Conditions on Surfaces*. Five-hour intensive mini-course at the conference “Modern and Classical aspects of algebraic curves”, Pedagogical University of Krakow.
2. January 2017: *An introduction to Bridgeland stability conditions*. Five-hour intensive minicourse at the “Introductory Workshop on Stability conditions, Quivers and DT invariants”, University of Sheffield.

INVITED TALKS IN SEMINARS:

1. University of Oslo, Algebraic Geometry Seminar, February 7th 2019. Talk *Spaces of stability conditions and degenerations*.
2. University of Birmingham, Algebraic Geometry Seminar, January 30th 2019. Talk *Spaces of stability conditions and degenerations*.
3. University of Plymouth, Algebraic Geometry Seminar, December 13th 2017. Talk *The birational geometry of moduli spaces via Bridgeland stability*.
4. University of Sheffield, Pure Math Colloquium, May 10th 2017. Talk *On the connectivity of dual graphs of projective curves*.
5. University of Warwick, Algebraic Geometry Seminar, March 7th 2016. Talk *Nef cones of Hilbert schemes of points via Bridgeland stability*.
6. Mc Master University, Algebra Seminar, November 7th, 2016. Talk *On the connectivity of dual graphs of projective curves*.
7. Fields Institute, Thematic program on Combinatorial Algebraic Geometry Seminar, October 11th, 2016. Talk *Nef cones of Hilbert schemes of points on surfaces via Bridgeland stability conditions*.
8. Colorado State University, FRAGMENT Seminar, September 28th, 2016. Talk *Nef cones of Hilbert schemes of points on surfaces via Bridgeland stability conditions*.
9. Boston College, Algebraic Geometry Seminar, January 28nd, 2016. Talk *Generic Strange Duality on abelian surfaces*.
10. University of Massachusetts Amherst, Valley Geometry Seminar, January 22nd, 2016. Talk *Generic Strange Duality on abelian surfaces*.
11. University of Utah, University of Utah Algebraic Geometry Seminar, December 8th, 2015. Talk *Strange Duality on Algebraic Surfaces*.
12. University of Miami, University of Miami Combinatorics Seminar, November 30th, 2015. Talk *Dual graphs of projective curves*.
13. Harvard University, Harvard-MIT Algebraic Geometry Seminar, April 7th, 2015. Talk *Rank one Strange Duality on Abelian Surfaces*.
14. Northeastern University, Geometry, Algebra, Singularities and Combinatorics Seminar, November 24th, 2014. Talk *Generic Strange Duality on Abelian Surfaces*.
15. Tufts University, Algebra and Geometry Seminar, November 4th, 2014. Talk *Generic Strange Duality on Abelian Surfaces and Local Freeness of the Verlinde sheaves*.

INFORMAL/EXPOSITORY:

1. University of Sheffield, Workshop on Stability, DT Invariants and Quiver Varieties, January 9-13, 2016. Five hour mini-course *An introduction to Bridgeland Stability Conditions*.
2. MIT-NEU Graduate Student Seminar on Moduli spaces of sheaves on K3 surfaces, April 2016. Talk *Examples of hyperkaehler manifolds as moduli spaces of sheaves on K3 surfaces*.
3. Northeastern Graduate Student Seminar, March 2nd, 2016. Talk *A survival guide to moduli spaces*.
4. MIT-NEU Graduate seminar on quiver varieties, April 28th, May 5th, May 8th, 2015. Talk *An introduction to Hodge Theory*.
5. MIT-NEU Graduate seminar on Quantum cohomology and Representation theory, February 3rd, February 10th 2014. Talk *A general introduction to the Hilbert Scheme of Points on the plane*.
6. Northeastern Graduate Student Seminar, October 2nd, 2014. Talk *Generic Strange Duality and local freeness of the Verlinde sheaves over abelian surfaces*.
7. Harvard AGLS Seminar, March 26th, 2014. Talk *Generic Strange Duality and local freeness of the Verlinde sheaves over abelian surfaces*.

8. MIT-NEU Graduate seminar on Quantum cohomology and Representation theory, Fall 2013. Talk *Stable Maps and Quantum Cohomology*.
9. Northeastern Graduate Student Seminar, April 9th, 2013. Talk *Projectivity and birational geometry of the Bridgeland moduli spaces on a K3 surface*.
10. MIT-NEU Cluster Algebras Seminar, October 27th, 2011. Talk *Cluster Algebras from surfaces*.

TEACHING EXPERIENCE

UNIVERSITY OF TOR VERGATA:

Spring 2019: 30 hour Graduate Course *Bridgeland Stability Conditions*

NORTHEASTERN UNIVERSITY:

Fall 2015: *Mathematical Thinking*, Lecturer.
Spring 2015: *Mathematical Thinking*, Lecturer.
Fall 2014: *Calculus 3*, Teaching Assistant.
Spring 2014: *Mathematical Thinking*, Lecturer.
Fall 2013: *Mathematical Thinking*, Lecturer.
Spring 2013: *Mathematical Thinking*, Lecturer.
Fall 2012: *Mathematical Thinking*, Teaching Assistant.
Spring 2012: *Calculus 3*, Teaching Assistant.
Fall 2011: *Calculus 3*, Teaching Assistant.

AWARDS

1. Northeastern University, Teaching Assistantship (since 2011)
2. Northeastern University, Special Provost Fellowship for University Excellence (since 2011)

LANGUAGES

ITALIAN (mother tongue), ENGLISH (fluent), SPANISH (good written and oral comprehension), FRENCH (good written comprehension), RUSSIAN (good written comprehension) and LATIN (good written comprehension).

PROFESSIONAL ACTIVITIES

SELECTED CONFERENCES ATTENDED:

1. The Combinatorics of Moduli Spaces, Fields Institute, Toronto, Canada, December 5 - 10, 2016.
2. Introductory Workshop on Combinatorial Algebraic Geometry, Fields Institute, Toronto, Canada, August 15 - 19, 2016.
3. Graduate Summer School on Combinatorial Algebraic Geometry, Fields Institute, Toronto, Canada, July 18 - 22, 2016.
4. "New methods in birational geometry", Toulouse, France, June 22 - 25, 2016.
5. Homological Mirror Geometry, Banff, Canada, from March 6th to March 11th 2016.

6. Algebraic Geometry Conference, Salt Lake City, UT (Summer 2015)
7. Algebraic Geometry Graduate Student Bootcamp, Salt Lake City, UT (Summer 2015)
8. Algebraic geometry Summer school and conference, Rio de Janeiro, Brazil (Summer 2015)
9. BC-Northeastern Algebraic Geometry Conference, Northeastern University, MA (Spring 2015)
10. AGNES conference, Boston College, MA (Spring 2015)
11. Current developments in Moduli Theory, Northeastern University (Fall 2014)
12. AGNES conference, Stony Brook, NY (Spring 2014)
13. Graduate Workshop on Geometry of Hilbert schemes, Stony Brook, NY (Fall 2013)
14. AGNES conference, Boston College, Boston, MA (Fall 2013)
15. Hodge Theory and Classical Algebraic Geometry, OSU, Columbus, OH (Spring 2013)
16. Graduate Workshop on Moduli Spaces and Bridgeland Stability, UIC, Chicago, IL (Spring 2013)
17. AGNES Conference, Brown University, Providence, RI (Fall 2012)
18. AMS meeting, Special Session on Geometry of Moduli Spaces of Sheaves, University of Kansas, Lawrence, KA (Spring 2012)
19. AGNES conference, Stony Brook, NY (Fall 2011)

SEMINARS AND CONFERENCES ORGANIZED:

1. Geometry in Pairs, University of Roma Tre, Fall 2019, co-organizer.
2. GLEN (Glasgow, Loughborough, Edinburgh and Nottingham) two-day workshop, Spring 2018, co-organizer.
3. Sheffield Algebra and Algebraic Geometry Seminar, Spring 2018, organizer.
4. Current development in Moduli Theory, Northeastern University (Fall 2014), local organizer.

Michela Ceria

About Me Postdoc Dept. of Computer Science, Univ. of Milan.

Academic positions

1/05/2018 – now Postdoc at Dept. of Computer Science, Univ. of Milan (IT).

26/04/2017 – 25/04/2018 Postdoc at Dept. of Mathematics, Univ. of Trento (IT).

07/04/2015 – 06/04/2017 Postdoc at Dept. of Engineering and Computer Science, Univ. of Trento (IT).

Awards, Scholarships and grants

French qualification to the function of *Maître de Conférences* Mathematics (11/02/2015 – 31/12/2019, n. 15225277843; 31/01/2019 – 31/12/2023, n. 19225277843), **Applied Mathematics** (04/02/2015 – 31/12/2019, n. 15226277843).

2011–2013 PhD scholarship Funded by INdAM (National Institution of High Mathematics).

2017–2018 Grant ISCRA-CINECA, IsC50_OGBC4EC, “Optimization of Groebner Basis computations for ECDLP”, with F.Pintore, M.Sala and A.Visconti

Research Interests (Keywords)

Combinatorial aspects of Computational Algebra; Commutative and noncommutative Groebner bases; Coding Theory and Cryptography; Computational Algebraic Geometry and Commutative Algebra; q-matroids theory, designs and rank metric codes.

Publications

2020 *Toward involutive bases over effective rings*, accepted by the Special issue of Applicable Algebra in Engineering, Communication and Computing, concerning “Algebraic Geometry from an Algorithmic point of View”. With T.Mora

2020 *Sublime Experience: new strategies for measuring the aesthetic impact of the sublime*, Imagine Maths 7: Conference Mathematics and Culture, with M.Mazzocut-Mis, A.Visconti, H.Tahayori

2020 *Why you cannot even hope to use Gröbner bases in cryptography: an eternal golden braid of failures*, accepted by the Special issue of Applicable Algebra in Engineering, Communication and Computing, concerning “Computer Algebra and application to combinatorics, coding theory and cryptography”. Doi: 10.1007/s00200-020-00428-w With B.Barkee, T.Moriarty, A.Visconti.

2020 *HELP: a sparse error locator polynomial for BCH codes*, accepted by the Special issue of Applicable Algebra in Engineering, Communication and Computing, concerning “Computer Algebra and application to combinatorics, coding theory and cryptography”. Doi: 10.1007/s00200-020-00427-x With T.Mora, M.Sala

2019 *Zech Tableaux as tools for sparse decoding*. accepted for publications in Rendiconti del Seminario Matematico. With T.Mora, M.Sala.

2019 *Bar Code vs Janet tree*. *Atti della Accademia Peloritana dei Pericolanti, Classe di Scienze Fisiche, Matematiche e Naturali* VOL 97, NO 2 (2019) Doi: 10.1478/AAPP.972A6

2019 *Measuring Performances of a White-box Approach in the IoT Context*. *Symmetry* 2019, 11(8), 1000; Doi: 10.3390/sym11081000 With D.Albricci, A.Shakiba, A.Visconti, F. Cioschi, N.Fornari

2019 *Applications of Bar Code to involutive divisions and a greedy algorithm for complete sets. (extended abstract)* International Conference Polynomial Computer Algebra '2019 St. Petersburg, Russia April 15–20, 2019 International Euler Institute – ISBN 978-5-96511-1234-0

2019 *Weak involutive bases over effective rings (extended abstract)* International Conference Polynomial Computer Algebra '2019 St. Petersburg, Russia April 15–20, 2019 International Euler Institute – ISBN 978-5-96511-1234-0 With T.Mora

2019 *Bar code: a visual representation for finite sets of terms and its applications* Mathematics in Computer Science, 14(2), 497–513 (2020), online in 2019 doi:10.1007/s11786-019-00425-4

2019 *A general framework for Noetherian well ordered polynomial reductions* Journal of Symbolic Computation, Vol. 95, P. 100–133 ISSN: 0747-7171, Doi: 10.1016/j.jsc.2019.02.002 With T.Mora, M.Roggero

2019 *Bar code for monomial ideals.* Journal of Symbolic Computation, Doi: 10.1016/j.jsc.2018.06.012 vol. 91, p. 30–56, ISSN: 0747-7171

2018 *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game (abstract)* Doi: 10.15304/978841695487 In 24th Conference on Applications of Computer Algebra – ACA 2018: Proceedings, Applications of Computer Algebra, Santiago de Compostela, Spain, June 18–22, 2018. With T.Mora

2018 *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game (extended abstract)* International Conference Polynomial Computer Algebra '2018 St. Petersburg, Russia April 16–21, 2018 International Euler Institute – ISBN 978-5-9651-1141-1 With T.Mora

2018 *Efficient computation of squarefree separator polynomials (extended abstract)* Doi:10.1007/978-3-319-96418-8_12 In: Davenport J., Kauers M., Labahn G., Urban J. (eds) Mathematical Software – ICMS 2018. Lecture Notes in Computer Science, vol 10931p. 98–104, Springer, ISBN: 9783319964171, ISSN: 1611-3349, South Bend, 2018, with T.Mora, A.Visconti.

2017 *Buchberger-Zacharias Theory of Multivariate Ore Extensions.* Doi: 10.1016/j.jpaa.2017.02.011 Journal of Pure and Applied Algebra, vol. 221, p. 2974–3026, ISSN: 0022-4049. With T. Mora

2017 *Bitcoin, la moneta virtuale per transazioni reali*, Interlex, may 2017. With M.Sala

2017 *Buchberger-Weispfenning Theory for Effective Associative Rings.* Doi: 10.1016/j.jsc.2016.11.008 Journal of Symbolic Computation, vol. 83, p. 112–146, ISSN: 0747-7171. With T.Mora

2016 *Bitcoin e Blockchain*, with F.Pintore, M.Sala. Aused Informa, 98.

2016 *A computational approach to the theory of adjoints.* Doi: 10.1478/AAPP.942A7 Atti della Accademia Peloritana dei Pericolanti, Classe di Scienze Fisiche, Matematiche e Naturali, vol. 94, p. 1–14, ISSN: 1825-1242.

2015 *Term-ordering free involutive bases* Doi: 10.1016/j.jsc.2014.09.005, Journal of Symbolic Computation, vol. 68, p. 87–108, ISSN: 0747-7171, with T.Mora, M.Roggero

2014 *A proof of the “Axis of Evil theorem” for distinct points.* Rendiconti del Seminario Matematico, vol. 72, p. 213–233, ISSN: 0373-1243 (2014).

Other accepted works

2019 *Bar Code and Janet-like division (extended abstract)*, accepted for a talk at ACA2019.

2019 *Weak Involutive bases over effective rings (extended abstract)*, accepted for a talk at ACA2019 With T.Mora.

2019 *HELP: the knight gambit for efficient decoding of BCH codes (extended abstract)*, accepted for a talk at ACA2019. With T.Mora, M.Sala.

2019 *Why you cannot even hope to use Gröbner bases in cryptography: an eternal golden braid of failures (extended abstract)*, accepted for a talk at ACA2019. With B.Barkee, T.Moriarty, A.Visconti.

2019 *Combinatorial decompositions for monomial ideals (extended abstract)*, accepted for the poster presentation at MEGA2019.

2018 *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game* Accepted for a talk at ACA 2018, PCA 2018. With T.Mora.

2017 *On the discrete logarithm problem for prime-field elliptic curves* Accepted for a computation presentation at MEGA 2017. With A.Amadori, F.Pintore, M.Sala

Submitted works

2020 *Bits, bytes and friends* (book) With G.Rinaldo, M.Sala

2020 *Constructions of new matroids and designs over $GF(q)$* , with E.Byrne, S.Ionica, R.Jurrius, E.Saçikara

2020 *Why you should not even think to use Ore algebras in Cryptography.*, with, T.Mora, A.Visconti.

2019 *A trojan Diffie-Hellman-like protocol based on proof of gullibility*, with, A.De Piccoli, T.Moriarty and A.Visconti.

2019 *Combinatorial decompositions for monomial ideals*

Available in Arxiv

2019 *Macaulay, Lazard and the Syndrome Variety* arXiv:1910.13189 [math.CO].

In preparation

Paper *Applications of Bar Code to involutive divisions and a greedy algorithm for complete sets.*

Paper *A performance-based approach to compare the Blockchain consensus procedures: PoW vs PoS vs Pure PoS.* With C.Lepore, A.Visconti, U.Pratap Rao, K.Arvinbhai Shah, and L.Zanolini

Paper *Half error locator polynomials for efficient decoding of binary cyclic codes*

Paper *Bar Code and Janet-like division*

Paper *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game.* With T.Mora

Paper *Towards involutive bases for effective algebras*, probably in cooperation with T.Mora

Paper *A variant of the iterative Moeller algorithm for giving Pommaret basis and its factorization*

Distributed software

2012 *JMBTest.lib: a J-marked basis tester* Library available from Singular 3-1-6:

<https://www.singular.uni-kl.de/index.php/singular-download.html> Author: M. CERIA

2012 *JMSConst.lib: a J-marked schemes constructor* Library available from Singular 3-1-6:

<https://www.singular.uni-kl.de/index.php/singular-download.html> Author: M. CERIA

Submitted software

AffMarkedSchemes.lib Prototype library for Singular which performs Affine Marked Schemes computation. *Submitted to Singular Team.* Author: M. CERIA

Organized Conferences

ACA202(1) Organizer (with T.Mora and A- Leroy) of the session Effective Ideal Theory in Commutative and non-Commutative Rings and its Applications. Athens, July 2021.

Widecom2019 Local Chair and member of the Technical Committee for the conference Widecom2019 - 11-13 Feb. 2019

One-day workshops Contribution to the organization of

- the one-day workshop on *Blockchain and Innovative Applications*, 10/02/2017
- the one-day workshop on *Cryptographic Aspects of Cloud and Distributed Computing*, 28/10/2016

MEGA 2015 Contribution to the local organization of the conference MEGA 2015, Univ. of Trento, Italy; 15-19 June 2015.

Miniworkshop Coding Theory and Cryptography 13-14 Oct. 2014, Univ of Turin. Organization, with C.Marcolla.

Visiting

Neuchâtel 10-12-2019 – 13-12-2019 I have been invited to Univ. of Neuchâtel by Prof. E. Gorla for research purpose and for delivering two seminars, one for the *research seminar on coding theory and cryptography* and the second for the *algebra seminar* (joint with Freiburg).

Rennes 26-08-2019 – 30-08-2019 Participation (completely funded) to the project WINE3 Workshop – Women in Numbers Europe 3 (3rd edition of the European WIN Workshop) In particular participation to the project by E. Byrne (University College Dublin) & R. Jurrius (The Netherlands Defense Academy) Title: *q-Analogues in Combinatorics*.

Linz 10-12-2018 – 15-12-2018 Invited for a seminar and for research purpose to the Univ. of Linz by Prof. M. Kauers.

Kaiserslautern During the period May–November 2012, I made short visits to *Univ. of Kaiserslautern* (Germany) and worked with Prof. W. Decker and H. Schoenemann. I implemented two libraries for the software Singular, which have been integrated in version 3-1-6 of the software. <http://www.singular.uni-kl.de/index.php/singular-devteams.html>. Moreover, I followed some courses on computational algebraic geometry.

Referee (from 22-09-2016 on)

Journals and conferences I have been a referee for the journals *AAECC* (Applicable Algebra in Engineering, Communication and Computing), *JSC* (Journal of Symbolic Computation), *Mathematische Nachrichten*, *Advances in Mathematics of Communications*, *Security and Communication Networks*, *Theoretical Computer Science and Internet of Things: Engineering Cyber Physical Human Systems*; moreover I have been a referee for the conferences *ISSAC* (International Symposium on Symbolic and Algebraic Computation), *MEGA* (International conference On Effective Methods in Algebraic Geometry) and *WTSC* (Workshop on Trusted Smart Contracts).

Reviews

Zentralblatt Math 2012–today 5 papers. **Mathematical Reviews 2017–today** 2 papers.

Research groups

European Women in Mathematics (2019–)

UMI National Mathematical Union (2018–)

De Componendis Cifris National association in Cryptography (Autum 2017–)

GNSAGA National Group for Algebraic and Geometrical structures and their Applications (2012–)

References

Prof. T. Mora Univ. of Genoa – 5919@unige.it

Prof. B. Buchberger RISC, Johannes Kepler University – bruno.buchberger@risc.jku.at

Students

Bachelor Thesis co–advisor for six students with Prof. A. Visconti. External advisor with Prof T. Mora for two students.

Master Master Thesis co–advisor for five students with Prof. M. Sala (one in collaboration with Dr. J. Shokrollahi of Bosh GmbH); Master Thesis co–advisor for one student with Dr. G. Rinaldo and for a student with Professor A. Visconti.

Tutoring 10-04-2015 — 25-04-2018 I have been tutor of 14 students, studying in the Major *Coding Theory and Cryptography* (now called *Cryptography*) of the Master of Degree in Mathematics at Univ. of Trento, helping them with their study plans, average grade and in deciding about their internships in companies.

Conferences, Schools, Seminars (invited speaker)

Seminar 9 April 2020 Invited for a seminar (online, in French) at the *séminaire Mathématiques Discrètes, Codes et Cryptographie*, Univ. of Paris 8.

Title: *Bases de Gröbner, degroebnerisation et leurs applications à la théorie des codes et à la cryptographie*

Seminars 10-13 December 2019 Univ. of Neuchâtel. Title [1]: *Half error locator polynomials for efficient decoding of binary cyclic codes*. [2]: *Combinatorics of ideals of points: Groebner escaliers, separator polynomials and applications to Algebraic Statistics*.

Seminar 8 November 2019 I have been invited by Prof. Ulmer at Univ. of Rennes for a seminar. Title: *Half error locator polynomials for efficient decoding of binary cyclic codes.*

Seminar 6 June 2019 Invited by Univ. of Milano Bicocca. Title: *Efficient computation of squarefree separator polynomials and applications to algebraic statistics.*

Seminar 13 December 2018 Invited by Univ. of Linz. Title: *DIY for Groebner bases: multivariate Ore extensions and effective rings.*

Seminar 5 December 2018 Invited by Univ. of Genoa. Title: *DIY for Groebner bases: multivariate Ore extensions.*

Seminar 4 December 2018 Invited by Univ. of Genoa. Title: *Bitcoin, blockchain and their applications.*

Seminar 21 and 23 May 2018 Invited by Univ. of Genoa. Title of the talks: *A crash course in Bitcoin and Blockchain [part 1 and 2].*

Seminar 27 March 2018 Invited by CTI Liguria for a seminar at Palazzo Ducale, Genoa. Title: *La crittografia dietro Bitcoin e blockchain.*

Seminar 20 December 2017 Invited for a seminar at Univ. of Genoa. Title: *Combinatorics of involutive divisions.*

Seminar 19 December 2017 Invited for a seminar at Univ. of Genoa. Title: *Bitcoin, Blockchain e loro Applicazioni.*

Conference 26-27 October 2017 Invited speaker to the *2nd Number Theory Meeting – Turin*, Polytechnic of Turin Title: *Groebner bases and ECDLP: Involution.*

Conference 29-30 May 2017 Invited speaker at *Theory and Computation in Algebra and Algebraic Geometry with a dedication to Paolo Valabrega on the occasion of his 70(+2)th Birthday*, Univ. of Turin
Title: *Combinatorics of involutive divisions*

Conference 4-7 June 2014 Invited speaker at the conference *Giornate di Geometria Algebrica e Argomenti Correlati XII*, Salone d'Onore del Castello del Valentino, Turin. Title: *Basi involutive “Term-ordering free”*

Selected Conferences, Schools, Seminars (speaker/poster)

Conference 2-7 Sept.2019 Speaker at *Congresso UMI – Pavia, Italy*. Title: *Bar Code: a visual representation for finite sets of terms and its applications*

Conference 16-20 July 2019 Speaker at *ACA 2019 – Montréal, Canada*. Title [1]: *Bar Code and Janet-like division* [2]: *HELP: the knight gambit for efficient decoding of BCH codes*

Conference 24-27 June 2019 Speaker at *NCRA VI – Lens, France*. Title: *Why you should not even think to use Ore algebras in Cryptography*

Conference 16-21 June 2019 Poster presentation at *MEGA2019 – Madrid, Spain*. Title: *Combinatorial decompositions for monomial ideals*

Conference 15-20 April 2019 Speaker at *PCA2019 – St.Petersburg, Russia*. Title: *Applications of Bar Code to involutive divisions and a greedy algorithm for complete sets.*

Conference 11-13 February 2019 Tutorial Speaker at *Widcom2019 – Milan, Italy*. Title: *Efficient cryptographic algorithms for securing passwords.*

Summer School August 2018 Participation to the poster session of *AEC 2018 – RISC, Linz, Austria*. Title: *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game.*

Conference 24-27 July 2018 Participation as speaker to *ICMS 2018 – Notre Dame, Indiana, USA*. Title: *Efficient computation of squarefree separator polynomials.*

Conference 18-22 June 2018 Participation as speaker to *ACA 2018 – session Algorithms for zero-dimensional ideals – Santiago de Compostela – Spain*. Title: *Combinatorics of ideals of points: a Cerlienco-Mureddu-like approach for an iterative lex game.*

Conference 2-7 April 2018 Participant to the poster session of the conference *Symmetry and Computation*, CIRM – Luminy – Marseille. Title: *Combinatorics of involutive divisions*

Conference 12-16 June 2017 Participation as speaker to *MEGA 2017. Effective methods in Algebraic Geometry*, Univ. of Nice, France. Title: *Bar Code for monomial ideals*

Summer School and Conference 1 – 10 July 2015 Speaker at the conference *Current Trends on Groebner Bases*, Osaka, Japan. Title: *A unifying form for noetherian polynomial reductions*. Participation to the summer school.

Conference 3- 7 June 2013 Participation to the poster session of the convention *MEGA 2013. Effective methods in Algebraic Geometry*, Univ. of Frankfurt, Germany. Title: *JMBTest.lib and JMSConst.lib: Singular Tools for J-Marked Schemes*.

Summer School 24-28 June 2013 *EACA'S Second International School On Computer Algebra and Applications*, Univ. of Valladolid, Spain. Seminar titled: *Bar-codes for monomial ideals*. Participation to courses.

Seminar Dec. 2012 Polytechnic of Turin Title: *L'Asse del Male* (The Axis-of-Evil Theorem).

Summer School 1-13 Oct. 2012 *Algebra for Secure and Reliable Communication Modeling*, Institute of Physics and Mathematics of the Univ. of Michoacán, Mexico. Lecturer of a seminar titled: *The Axis-of-Evil Theorem*. Participation to courses.

Conference 17-21 Sept. 2012 Participation as a speaker to the convention *MAP 2012 – Mathematics, Algorithms and Proofs*, Univ. of Konstanz, Germany. Title: *The Axis-of-Evil algorithm*. Participation to the 'Young Researchers' Session' with a brief talk on my research activities.

Summer School July-Aug. 2012 *PHD School on Groebner Bases, Curves, Codes and Cryptography*, Univ. of Trento. Seminar titled: *A Bar-Code algorithm for the 'Axis of Evil' Theorem*. Participation to courses.

Summer school Oct. 2011 *International School on Computational Commutative Algebra and Algebraic Geometry*, Villa Pace-Univ. of Messina. Seminar titled: *Classification of Adjoint Curves*. Participation to courses.

Teaching Experience – University courses

Ongoing PhD course for the Dept. of Computer Science, Univ. of Genoa "Blockchain 101", with M. Ribaudo

18/09/2017 – 16/02/2018 Master Degree in Mathematics, Univ. of Trento: *Advanced Coding Theory and Cryptography* with M.Sala and CryptoLabTN.

14/09/2015 – 12/02/2016 and 14/09/2016 – 17/02/2017 Master Degree in Mathematics, Univ. of Trento: *Algebraic Cryptography*, with M.Sala and CryptoLabTN.

2016 PhD in Mathematics, Univ. of Trento: *Groebner Bases applied to Cryptography and Coding Theory*, with E.Bellini, M.Piva and M.Sala

2013–2014 Bachelor in Engineering, Polytechnic of Turin, *Geometry*, with G.Casnati.

2011–2013 Bachelor in Engineering, Polytechnic of Turin, *Geometry*, with C.Massaza.

Teaching Experience – courses for professionals

May 2018 Lecturer for the course *Post-Quantum Cryptography* for the part on multivariate post-quantum cryptography. Scientific coordination: M.Sala.

Nov. 2017 Lecturer for the course *Monero: the dark side of cryptocurrencies* Prof.: M.Sala.

Oct. 2017 Lecturer for the course *Bitcoin, Blockchain and their new frontiers in Milan* Prof.: M.Sala.

May 2017 Lecturer for the course *Bitcoin, Blockchain and their new frontiers in Trento* Prof.: M.Sala.

Nov. 2016 Assistant Lecturer for the courses *Bitcoin, Blockchain and their new frontiers in Milan, Bitcoin, Blockchain and their new frontiers in Rome*. Prof.: M.Sala.

Sept. 2016 Assistant Lecturer for the course *Bitcoin, Blockchain and their new frontiers II*, Univ. of Trento Prof.: M.Sala.

May 2016 – May 2017 Assistant Lecturer for the course *Bitcoin, Blockchain and their new frontiers*, Univ. of Trento Prof.: M.Sala.

Teaching Experience – e-learning and courses' coordination

Course coordination 2018/2019 Coordination (*Professore a contratto*) for the blended course in Computer Science for the faculty of Linguistic Mediation.

E-learning 2015 – 2018 *Applications of Cryptography to Security and Privacy* and *BoAB: Bitcoin and other Applications of Blockchain*, with M.Sala.

Teaching Experience – experience at school

November 2014 Liceo Istituto Comprensivo S. Francesco d'Assisi – Biella Brief mathematics substitute teaching.

Summer 2014 Liceo Giuseppe & Quintino Sella – Classico Linguistico Artistico Mathematics recovery course.

Education

2011–2013 Univ. of Turin, Italy *PhD in Mathematics*, Defence:14/02/2014. Title of PhD Thesis: *Combinatorial structure of monomial ideals*. Developed with Professors: M.G. Marinari, T. Mora, M. Roggero.

2007–2010 Univ. of Turin, Italy *Master degree in Mathematics* Defence on 20/07/2010 with grade 110/110 cum laude and mention. Title of MSc Thesis: *Conductor and adjoints of algebraic curves*. Developed with Professors: M. Roggero and P. Valabrega.

2003–2007 Univ. of Turin, Italy *Bachelor degree in Mathematics* Faculty of Mathematical, Physical and Natural Science, Univ. of Turin · Bachelor degree obtained on 27/04/ 2007 with grade 104/110. Title of Bachelor Thesis: *Matroids and parking functions*. Developed with Professor M. Roggero.

Foreign languages

Italian Mothertongue; **English** Good, IELTS (Academic), got in Sept. 2010, grade 7; **French** Scholastic, B1 MC Graw Hill certificate got online; **Japanese** Scholastic.

Software Development Skills

OS: Linux (Ubuntu), Microsoft Windows, Mac OS X, Android. **Programming:** C/C++ (basic notions), Singular, Magma. **Softwares:** Singular, Cocoa, Maple, Magma. **E-learning:** Moodle, Sakai, Google Classroom.

Other information

Advisory Board I contributed to the creation of an *Advisory Board* of companies in Trento. These companies financed stages and scholarships for students and iterfaced with the Department, highlighting the specific knowledge they would need for people to work within them.

Hopf Algebras course followed the Hopf algebra Course held by Prof. Ardizzoni to the PhD School in Mathematics at Univ. of Turin.

Lie Algebras course followed the Lie algebra Course held by Prof. De Graaf to the PhD School in Mathematics at Univ. of Trento.

Diffusion: Researchers' night (Turin and Trento), instructor for olympic games in Mathematics. Milano, 07/06/2020

CURRICULUM VITAE ET STUDIORUM

Chrysikos Ioannis

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Address:	Faculty of Science, Department of Mathematics University of Hradec Králové Rokitanského 62/26, 50003 Hradec Králové Building S, office 72130, 2nd floor, Czech Republic

Index

- Academic qualifications
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Data

02/06/1980 born in Lamia Fthiotidos (GR); Nationality & Citizenship: Greek

Academic degrees

1998–2004 **B.S. degree in Mathematics** in Department of Mathematics, University of Patras (GR) / Qualification to teach mathematics in Greek highschools

2005–2007 **M.S. degree in Pure Mathematics** in Department of Mathematics, University of Patras
 Master Thesis: *The geometry of homogeneous spaces and generalized flag manifolds*

2008–2011 **Ph.D in Differential Geometry** (Doctorate in Mathematics) in Department of Mathematics, University of Patras
 Ph.D Thesis: *Homogeneous Einstein metrics on generalized flag manifolds*
 supervisor: Prof. A. Arvanitoyeorgos

08/2017 **Habilitation by Abilitazione Scientifica Nazionale (ASN)**, University of Torino (IT)
 Qualification to teach pure mathematics in Italian Universities

Current position

03/2019-present Leader of a Junior Research Team in Faculty of Science in University of Hradec Králové (UHK), supported by Czech Science Foundation (GAČR) via the Grant 19-14466Y (3 years duration)

Previous employment

09/2007–09/2010 Teaching Assistant, University of Patras, Department of Mathematics (GR)

11/2010–08/2011 Military service in Hellenic Navy

09/2011–02/2012 Academic Researcher (postdoc), Philipps-Universität Marburg, Fachbereich Mathematik und Informatik, Marburg (DE) ¹

03/2012–09/2013 Academic Researcher (postdoc), Masaryk University, Department of Mathematics and Statistics, Brno (CZ) ²

10/2013–02/2014 Teaching Assistant and DAAD fellow (postdoc), Philipps-Universität Marburg, Fachbereich Mathematik und Informatik, Marburg

03/2014–12/2015 Academic Researcher (postdoc), Masaryk University, Department of Mathematics and Statistics, Brno ³

01/2016–03/2016 Scientific visitor in Masaryk University, Department of Mathematics and Statistics, Brno

04/2016–09/2016 Research Associate in Hradec Králové University, Faculty of Science (CZ)

10/2016-09/2018	Academic Researcher (INdAM-Marie Curie fellowship), Department of Mathematics "Giuseppe Peano", Università degli Studi di Torino (IT)
10/2018-02/2019	Research Associate in University of Hradec Králové, Faculty of Science
03/2019- 12/2021	Leader of a Junior Research Team in UHK, supported by Czech Science Foundation (GAČR), Hradec Králové University, Faculty of Science

RESEARCH FUNDING

Personal grants

10/2007 –10/2010	3-years Ph.D grant scholarship, University of Patras, Programme C. Carathéodory grant C.161 2007-10
10/2011 – 02/2012	6-months partially funded by DFG via the special research program 1388 "Representation Theory"
03/2012–03/2013	1-year Czech Science Foundation fellow (GAČR), No. P201/12/G028.
10/2013–02/2014	6-months Deutscher Akademischer Austausch Dienst (DAAD) fellow
03/2014–12/2015	2-years Czech Science Foundation (GAČR) fellow, No. GP14-24642P
10/2016 –10/2018	2-years INdAM Fellow cofunded by Marie Curie Actions
01/2019 – 12/2021	3-years grant for leading a Junior Research Team (GAČR), No. 19-14466Y

Member or Leader of Research groups/Projects

09/2011–02/2012	Member of the Research group: " <i>Differential Geometry and Global Analysis</i> ", Philipps-Universität Marburg, Fachbereich Mathematik und Informatik
04/2013–09/2013	Participated in the project " <i>Algebraic methods in geometry with potential applications</i> " in Masaryk University, Department of Mathematics and Statistics, Faculty of Science
10/2013–02/2014	Member of the Research group: " <i>Differential Geometry and Global Analysis</i> ", Philipps-Universität Marburg, Fachbereich Mathematik und Informatik
10/2016 –10/2018	Member of the Research group: " <i>Differential Geometry in Torino</i> ", Dipartimento di Matematica "Giuseppe Peano", Università degli Studi di Torino
01/2019 – 12/2021	Leader of a Junior Research Team (3 postdoc members) supported via the project " <i>Supergravity backgrounds, G-structures and Einstein metrics</i> ", Faculty of Science, University of Hradec Králové

Research interests

Homogeneous spaces, Lie groups, Lie Algebras, Representation theory;

¹ Partially supported by DFG, hosted by Philipps-Universität Marburg, Fachbereich Mathematik und Informatik

² Post-graduate (doctorate) grants by Czech Science Foundation (GAČR), No. P201/12/G028

³ Post-graduate (doctorate) grants by Czech Science Foundation (GAČR), No. GP14-24642P

Homogeneous Einstein metrics, Ricci flow, Geometric flows, Dynamical systems;
 Gröbner bases, Applied algebraic geometry, Symbolic computation;
 Einsteins metrics of non-generic holonomy, Special geometric structures;
 Geometry of homogeneous spaces, Invariant connections;
 Global geometry, G -structures, Characteristic classes;
 Spin geometry, Dirac operators, Dirac operators with torsion;
 String theory, 11-dimensional Supergravity theory;

PUBLICATIONS

A) articles in scientific impacted journals

1. D. Alekseevsky, I. Chrysikos, A. Fino, A. Raffero: *Homogeneous 8-manifolds admitting invariant $Spin(7)$ -structures*, to appear in International Journal of Mathematics, 2020, (arXiv: 1904.00643).
2. I. Chrysikos: *A note on the volume of ∇ -Einstein manifolds with skew-torsion*, to appear in Communications in Mathematics, 2020 (arXiv:1909.02052).
3. I. Chrysikos, A. Galaev: *Decomposable $(6, 5)$ -solutions in 11-dimensional supergravity*, Classical Quantum Gravity, Vol. 37 (2020), 125004, (26pp).
4. D. V. Alekseevsky, I. Chrysikos, A. Taghavi-Chabert: *Decomposable $(4, 7)$ solutions in 11-dimensional supergravity*, Classical Quantum Gravity, Vol. 36 (2019), 075002, (28pp).
5. I. Chrysikos, C. O'Cadiz Gustad, H. Winther: *Invariant connections and ∇ -Einstein structures on isotropy irreducible spaces*, Journal of Geometry and Physics Vol. 138, (2019), 257–284.
6. D. V. Alekseevsky, I. Chrysikos: *Spin structures on compact homogeneous pseudo-Riemannian manifolds*, Transformation Groups, Vol 24. (3), (2019), 659–689.
7. I. Chrysikos: *A new $\frac{1}{2}$ -Ricci type formula on the spinor bundle and applications*, Advances in Applied Clifford Algebras, Vol. 27, (4), (2017), 3097–3127.
8. I. Chrysikos, Y. Sakane: *Non-naturally reductive Einstein metrics on compact Lie groups*, Journal of Geometry and Physics, 116 (2017), 152–186.
9. I. Chrysikos: *Killing and twistor spinors with torsion*, Annals of Global Analysis and Geometry, Vol. 49 (2016), 105–141.
10. I. Chrysikos: *Invariant connections with skew-torsion and ∇ -Einstein manifolds*, Journal of Lie Theory, Vol. 26, (2016), 11–48.
11. I. Chrysikos, Y. Sakane: *The classification of homogeneous Einstein metrics on flag manifolds with $b_2(M) = 1$* , Bulletin de Sciences Mathématiques, Vol. 138, (6), (2014), 665–692.
12. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Homogeneous Einstein metrics on generalized flag manifolds with five isotropy summands*, International Journal of Mathematics, Vol. 24, (10), (2013), 1350077 (52pages).
13. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Homogeneous Einstein metrics on G_2/T* , Proceedings of the American Mathematical Society, Vol. 141, (7), (2013), 2485–2499.

14. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Proving isometry for homogeneous Einstein metrics on flag manifolds by symbolic computation*, Journal of Symbolic Computation, Vol. 55, (2013), 59–71.
15. I. Chrysikos: *Flag manifolds, symmetric \mathfrak{t} -triples and Einstein metrics*, Differential Geometry and its Applications, Vol. 30, (6), (2012), 642–659.
16. S. Anastassiou, I. Chrysikos: *The Ricci flow approach to homogeneous Einstein metrics on flag manifolds*, Journal of Geometry and Physics, Vol. 61 (2011), 1587–1600.
17. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Homogeneous Einstein metrics on the generalized flag manifold $Sp(n)/(U(p) \times U(n-p))$* , Differential Geometry and its Applications, Vol. 29 (1), (2011), S16–S27.
18. A. Arvanitoyeorgos, I. Chrysikos: *Invariant Einstein metrics on generalized flag manifolds with two isotropy summands*, Journal of Australian Mathematical Society, Vol. 90, (02), (2011), 237–251.
19. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Complete description of invariant Einstein metrics on the generalized flag manifold $SO(2n)/U(p) \times U(n-p)$* , Annals of Global Analysis and Geometry, Vol. 38, (2010) 413–438.
20. A. Arvanitoyeorgos, I. Chrysikos: *Invariant Einstein metrics on generalized flag manifolds with four isotropy summands*, Annals of Global Analysis and Geometry, Vol. 37, (2010), 185–219.
21. A. Arvanitoyeorgos, I. Chrysikos: *Motion of charged particles and homogeneous geodesics in Kähler C -spaces with two isotropy summands*, Tokyo Journal of Mathematics, Vol. 32 (2), (2009), 487–500.

B) published contributions in academic conferences

1. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Homogeneous Einstein metrics on generalized flag manifolds with G_2 -type t -roots*, Prospects of Differential Geometry and Its Related Fields, Proceedings of the 3rd International Colloquium on Differential Geometry and Its Related Fields, Veliko Tarnovo, September 2012, published by World Scientific Publishing Company, 2013, 15-38, ISBN 978-981-4541-82-4.
2. A. Arvanitoyeorgos, I. Chrysikos, Y. Sakane: *Homogeneous Einstein metrics on generalized flag manifolds $Sp(n)/(U(p) \times U(q) \times Sp(n-p-q))$* , Prospects of Differential Geometry and Its Related Fields, Proceedings of the 2nd International Colloquium on Differential Geometry and its Related Fields, Veliko Tarnovo, September 2010, published by World Scientific Publishing Company, 2011, 1-24, ISBN: 978-981-4355-46-9.

C) Theses

- (MSc) *Geometry of homogenous spaces and flag manifolds*, (in Greek) University of Patras, 2007.
 (PhD) *Homogeneous Einstein metrics on generalized flag manifolds*, (in Greek) University of Patras, 2011.

D) Preprints

1. I. Chrysikos, Y. Sakane: *Homogeneous Einstein metrics on non-Kähler C-spaces*, (2020 submitted), arXiv:2002.07861.

E) Current collaborators

- D. Alekseevsky (Moscow, RU), S. Anastassiou (Patras, GR), H. Chi (Waterloo, ON),
- A. Fino (Torino, IT), A. Galaev (Hradec Králové, CZ), A. Raffero (Torino, IT),
- Y. Sakane (Osaka, JP), E. Schneider (Hradec Králové), H. Winther (Brno, CZ).

SELECTED TALKS

- 2019 • *Homogeneous spaces admitting invariant $Spin(7)$ -structures*, 14th Conference of Differential Geometry and its Applications (DGA2019), University of Hradec Králové (CZ)
 - *Homogeneous 8-manifolds admitting invariant $Spin(7)$ -structures*, Nordfjordeid Summer School, Analysis, Geometry and PDE, Nordfjordeid (NOR)
 - *Homogeneous 8-manifolds admitting invariant $Spin(7)$ -structures*, Oberseminar Geometrie und Topologie, Institut für Geometrie und Topologie, Universität Stuttgart (DE)
- 2018 • *(4, 7)-decomposable solutions of 11-dimensional supergravity*, Winter School in Geilo, Norway: Geometry, Analysis, Physics (NOR)
 - *A new $1/2$ -Ricci type formula on the spinor bundle and applications*, Informal Geometry Workshop in “Paradiso”, Cogne (IT)
- 2017 • *A new $1/2$ -Ricci type formula on the spinor bundle and applications*, 19th ÖMG Congress and Annual DMV Meeting 2017, Salzburg (AT)
 - *The Ricci endomorphism on the spinor bundle and applications*, Geometric Seminar, University of Florence, Dipartimento di Matematica e Informatica “Ulisse Dini” (IT)
- 2016 • *Spin structures on flag manifolds and C-spaces*, Workshop in Lie Theory and Geometry, Philipps-Universität Marburg, Castle Rauischholzhausen (DE)
 - *Classification of invariant connections and ∇ -Einstein structures on isotropy irreducible spaces*, Geometric Seminar in Faculty of Science, Department of Mathematics, Hradec Králové University (CZ)
- 2015 • *Killing spinors with torsion parallel under the characteristic connection*, Workshop on Almost Hermitian and Contact Geometry, Będlewo (PL)
 - *Dirac operators with torsion and applications*, Seminar of Differential Geometry, Department of Mathematics and Statistics, Masaryk University, Brno (CZ)
 - *Killing spinors with torsion on naturally reductive spaces*, Forschungsseminar “Mathematische Physik”, Philipps-Universität Marburg (DE)

-
- 2014 • *Killing spinors with torsion on compact naturally reductive spaces*, Seminar of Differential Geometry, Department of Mathematics and Statistics, Masaryk University, Brno (CZ)
- *Invariant connections with skew-torsion and ∇ -Einstein manifolds*, Geometric Seminar, Department of Mathematics, Graduate School of Science, Hiroshima University, Hiroshima (JP)
- *Invariant connections with skew-torsion and ∇ -Einstein structures*, ECI and AMEGA Workshop, Třešť (CZ)
- *Non-naturally reductive Einstein metrics on compact Lie groups*, Central European Mathematical Seminar, Brno (CZ)
- *Connections with skew-torsion on homogeneous spaces and applications*, Forschungsseminar "Mathematische Physik", Philipps-Universität Marburg (DE)
- 2013 • *The Dirac operator on homogeneous spaces*, Central European Mathematical Seminar, Brno (CZ)
- 2012 • *Einstein metrics on flag manifolds with second Betti number $b_2(M) = 1$* , Workshop of Algebraic methods in geometry with potential towards applications, Třešť (CZ)
- *Spin structures on flag manifolds*, Central European Mathematical Seminar, Brno (CZ)
- *Homogeneous Einstein metrics and their special geometric structures*, Faculty of Mathematics and Natural Sciences, Universität zu Köln (DE)
- 2011 • *Old and new results on homogeneous Einstein metrics*, Forschungsseminar "Mathematische Physik", Philipps-Universität Marburg (DE)
- 2010 • *Homogeneous Einstein metrics on generalized flag manifolds*, Conference of Differential Geometry and its Applications (DGA2010), Brno (CZ)
- *Representation theory of compact Lie groups*, Geometric Seminar, University of Patras (GR)
- 2009 • *Invariant Einstein metrics on flag manifolds*, 9th Panhellenic Geometry Conference, University of Crete, Anogia, (GR)
- *Homogeneous Kähler structures and co-adjoint orbits I, II, III*, Geometric Seminar, University of Patras (GR)
- 2008 • *Representation theory of complex semi-simple Lie algebras I, II, III*, Geometric Seminar, University of Patras (GR)
-

SELECTED CONFERENCES & WORKSHOPS

- 2020 • *Geometric Structures and Supersymmetry* 22-25/06/2020, Tromsø (postponed due to covid19)

- *Final video conference presenting the UHK postdoctoral researchers*, 21/05/2020, Hradec Králové
- 2019 • *14th Conference of Differential Geometry and its Applications (DGA2019)*, 1-7/09/2019, Hradec Králové
 - *Nordfjordeid Summer School, Analysis, Geometry and PDE*, 1-5/07/2019, Nordfjordeid
- 2018 • *Conference “RIEMain in Contact”*, 18-22/06/2018, Cagliari
 - *The 5th Workshop “Complex Geometry and Lie groups”*, 11-15/06/2018, Firenze
 - *Winter School in Geilo, Norway: Geometry, Analysis, Physics*, 04-10/03/2018, Geilo
 - *Informal Geometry Workshop in “Paradiso”*, 22-24/01/2018, Cogne
- 2017 • *19th ÖMG Congress and Annual DMV Meeting*, 11-15/09/2017, Salzburg
 - *Workshop “Differential Geometry Days”*, (University of Torino) 05-07/04/2017, Torino
 - *Workshop (Non)-existence of complex structures on S^6* , (Philipps-Universität Marburg) 27-30/03/2017, Marburg
- 2016 • *Conference Differential Geometry and its Applications (DGA2016)*, 11-15/07/2016, Brno
- 2015 • *Workshop on Almost Hermitian and Contact Geometry*, 18-24/10/2015, Będlewo
 - *ECI Workshop European Mathematical Seminar*, 9-10/10/2015, Třešť
 - *The 35th Winter School Geometry and Physics*, 17-24/01/2015, Srní
- 2014 • *Workshop on Neurogeometry and other related problems*, 2-6/04/2014, Humpolec
 - *ECI and AMEGA Workshop*, 11-12/04/2014, Třešť
- 2013 • *Winter School on Quantum Ergodicity and Harmonic Analysis*, (Philipps-Universität Marburg) 13-15/11/2013, Marburg
 - *Seminar DGA: Geometric control, sub-Riemannian geometry, and their application*, 25-30/08/2013, Brno
 - *Conference Differential Geometry and its Applications (DGA2013)*, 19-23/08/2013, Brno
 - *Geometry Autumn School*, (Philipps-Universität Marburg) 23-26/09/2013, Marburg
 - *The 33rd Winter School Geometry and Physics*, 12-19/01/2013, Srní
- 2012 • *Geometric Structures on Manifolds and their Applications*, 1-7/07/2012, Castle Rauischholzhausen
 - *Workshop on Neurogeometry, AMEGA project*, 4-5/05/2012, Karlov
 - *Workshop on Neurogeometry, AMEGA project*, 15-17/11/2012, Telč
 - *Seminar in Třešť, AMEGA project*, 19-20/10/2012 Třešť
- 2011 • *Geometric Structures in mathematical Physics*, 19-26/09/2011, Golden Sands

- 2010 • *Conference of Differential Geometry and its Applications* (DGA2010), 27-31/08/2010, Brno
- 2009 • *9th Panhellenic Geometry Conference*, 29-32/05/2009, University of Crete, Anogia
- 2007 • *Conference Differential Geometry and its Applications* (DGA2007), 27-31/08/2007, Olomouc

INVITATIONS & RESEARCH STAYS

Seminar talks or Colloquiums in Universities of:

Patras, Thessaloniki, Creta (Heraklion), Marburg, Köln, Osaka, Hiroshima, Torino, Firenze, Stuttgart, Brno

Some research stays

- 03/2014–04/2014 2 weeks - Philipps-Universität Marburg, Fachbereich Mathematik und Informatik
- 10/2014–11/2014 3 weeks - Osaka University, Department of Pure and Applied Mathematics
- 01/2016–03/2016 3 months - Masaryk University, Faculty of Science, Brno
- 09/2017–10/2017 2 weeks - Università degli Studi di Firenze, Dipartimento di Matematica e Informatica “Ulisse Dini”
- 02/2020–03/2020 2 weeks - Masaryk University, Faculty of Science, Brno

ADVISORY ROLE

- **Referee:** *Annals of Global Analysis and Geometry*, *Differential Geometry and Applications*, *Mathematische Nachrichten*, *Journal of Lie Theory*, *Transformation Groups*, *Czechoslovak Mathematical Journal*, *Communications in Analysis and Geometry*, *Analysis and Mathematical Physics*.
- **Scientific Reviewer** for *Zentralblatt für Mathematik* (zbMath).

TEACHING ⁴

Graduate lectures (for master/phd students and teachers)

- ^{en} Teaching the graduate course: “*Introduction to bundle theory and Dirac operators*”, Masaryk University (CZ) Winter 2020
- ^{en} Teaching the graduate course: “*An introduction to Spin geometry*”, Università degli Studi di Torino (IT) Winter 2018

⁴The first column points at the language of the given lectures: ^{gr} Greek, ^{en} English.

- ^{en} Teaching the graduate course: “*Topics in Spin geometry*”, Università degli Studi di Torino Winter 2017
- ^{en} Teaching assistant of the course “*Functional Analysis III*”, Philipps-Universität Marburg (DE) Fall 2013

Undergraduate lectures

- ^{gr} Teaching Assistant: *Differential Geometry I*, University of Patras (GR) Fall 2009
- ^{gr} Teaching Assistant: *Differential Geometry I*, University of Patras (GR) Fall 2010
- ^{gr} Teaching Assistant: *Tensor Analysis*, University of Patras Winter 2009
- ^{gr} Teaching Assistant: *Tensor Analysis*, University of Patras Winter 2010
- ^{gr} Teaching Assistant: *Vector Calculus, II*, University of Patras Fall 2008
- ^{gr} Teaching Assistant: *Vector Calculus, III*, University of Patras Winter 2007
- ^{gr} Teaching Assistant: *Vector Calculus, III*, University of Patras Winter 2008
- ^{gr} Teaching Assistant: *Linear Algebra*, University of Patras Winter 2007
- ^{gr} Teaching Assistant: *Linear Algebra*, University of Patras Winter 2008
- ^{gr} Teaching Assistant: *Mathematics I*, University of Patras Fall 2007

SUPERVISION

- 07/2019–present Dr. Eivind Schneider (he is a young researcher (postdoc) and member of the Junior Research Team (GAČR), supported by the project No. 19-14466Y with leader the applicant)
- 10/2019–12/2019 Dr. Hanci Chi (he is a young researcher (postdoc) and collaborator with the applicant. He had a 3-month stay in UHK, supervised by the applicant. The common project is under completion).

CO-ORGANISATION OF WORKSHOPS/CONFERENCES/SCHOOLS

- September 2020 3-days online workshop dedicated to the 80th birthday of Prof. Alekseevsky (under preparation) University of Hradec Králové
- 01-07/09/2019 DGA Conference, *Differential Geometry and Applications*⁵ University of Hradec Králové
- 01-31/08/2019 Summer School on *Geometry and Topology*⁶ University of Hradec Králové
- 21/09/2018 Workshop: *Geometries with Torsion*⁷ Università degli Studi di Torino
- 02-04/05/2018 Workshop: *Pluripotential Theory, Geometric Analysis and Calibrated Geometry*⁸ Università degli Studi di Torino

03-05/04/2017 Workshop: *Differential Geometry Days*⁹
Università degli Studi di Torino

OTHER INFORMATION

Language knowledge:

- Greek: mother tongue
- English: fluent
- Italian: basic (sufficient for reading Italian books and basic speaking - soon extension to fluent level).
- German: basic (sufficient for reading German books and understanding discussions in German).

⁵<http://dga2019.uhk.cz>

⁶<https://lide.uhk.cz/prf/ucitel/galaeani/School2019.htm>

⁷<https://sites.google.com/site/geometrieswithtorsion/home>

⁸<https://sites.google.com/site/pluripotentialtheoryworkshop/>

⁹<https://sites.google.com/site/differentialgeometrydays/home>

Guido Franchetti

Curriculum Vitae et Studiorum

Curriculum vitae redatto ai sensi degli artt. 46 e 47 del D.P.R. 28 dicembre 2000, n. 445 e successive modificazioni e integrazioni (dichiarazione sostitutiva di certificazioni e dell'atto di notorietà).

Posizione attuale

- 01/07/2019 - **Visiting researcher**, *School of Mathematics, University of Edinburgh, UK.*
01/10/2017 - **Assegnista di ricerca**, *Dipartimento di Matematica “G. Peano”, Università degli Studi di Torino, Italy.*

Posizioni precedenti

- 01/10/2015 - **Wissenschaftlicher Mitarbeiter**, *Institut für Theoretische Physik, Leibniz Universität Hannover, Germany.*
30/09/2017
02/09/2013 - **Research Associate**, *School of Mathematical and Computer Sciences, Heriot-Watt University, Edinburgh,*
01/09/2015 *UK.*

Istruzione e formazione

- 26/04/2014 **PhD**, (*Marie Curie ESR*), *DAMTP, University of Cambridge, UK.*
Tesi: “Pattern-forming in non-equilibrium quantum systems and geometrical models of matter”, relatori N. Berloff e N. Manton
17/06/2010 **Master of Advanced Study (Part III)**, *DAMTP, University of Cambridge, UK.*
30/09/2008 **Laurea Specialistica in Scienze Fisiche e Astrofisiche**, *Università degli Studi di Firenze, 110/110.*
12/12/2006 **Laurea Triennale in Fisica**, *Università degli Studi di Firenze, 110/110 e Lode.*

Premi e riconoscimenti

- 2018 Vincitore del “Bando per l'internazionalizzazione della ricerca — anno 2018” del valore di 30.000 € finanziato dalla Compagnia di San Paolo.
2017 Riconoscimento di eccellenza per il proposal “The geometry and dynamics of hyperbolic monopoles”, presentato in occasione del bando Horizon 2020 Marie Skłodowska-Curie actions H2020-MSCA-IF-2016 del 14/09/2016.

Didattica

- 2019 **Correlatore**, tre tesi triennali in Fisica Matematica.
2018 **Titolare**, corso “Matematica II” (algebra lineare e gruppi finiti), Dipartimento di Chimica, Università degli Studi di Torino (52 ore e correzione degli esami).
2016 **Esercitatore**, corso di relatività speciale e meccanica analitica, Leibniz University, Hannover, Germany.
2014 **Esercitatore**, corso “Differential Geometry”, Heriot-Watt University, Edinburgh.
Esercitatore, corso “Differential Equations and Applications”, AIMS Ghana.
Esercitatore, corso “Vector Analysis”, Heriot-Watt University, Edinburgh, UK.

Pubblicazioni

- [9] G. Franchetti. Harmonic forms and spinors on the Taub-bolt space. *J. Geometry Phys.* **141**, pp. 11–28, 2019. arXiv:1812.07512.
[8] G. Franchetti. Harmonic spinors on a family of Einstein manifolds. *Nonlinearity* **31**, pp. 2419–2441, 2018. arXiv:1705.02666.
[7] G. Franchetti, B. J. Schroers. Adiabatic dynamics of instantons on S^4 . *Commun. Math. Phys.* **353**, pp. 185–228, 2017. arXiv:1508.06566.
[6] G. Franchetti, R. Maldonado. Monopoles, instantons, and the Helmholtz equation. *J. Math. Phys.* **57**, p. 073502, 2016. arXiv:1603.09575.

- [5] M. F. Atiyah, G. Franchetti, B. J. Schroers. Time evolution in a geometric model of a particle. *J. High Energy Phys.* **02**, p. 062, 2015. arXiv:1412.5915.
- [4] G. Franchetti. Harmonic forms on ALF gravitational instantons. *J. High Energy Phys.* **12**, p. 075, 2014. arXiv:1410.2864.
- [3] G. Franchetti, N. S. Manton. Gravitational instantons as models for charged particle systems. *J. High Energy Phys.* **03**, p. 072, 2013. arXiv:1301.1624.
- [2] P. Cristofolini, A. Dreismann, G. Christmann, G. Franchetti et al. Optical superfluid phase transitions and trapping of polariton condensates. *Phys. Rev. Lett.* **110**, p. 186403, 2013.
- [1] M. Borgh, G. Franchetti, J. Keeling, N. G. Berloff. Robustness and observability of rotating vortex lattices in an exciton-polariton condensate. *Phys. Rev. B* **86**, p. 035307, 2012. arXiv:1204.4095.

Preprints

- [1] G. Franchetti, N. G. Berloff, J. J. Baumberg. Exploiting quantum coherence of polaritons for ultra sensitive detectors. arXiv:1210.1187.

Comunicazioni scientifiche selezionate

- 2020 “Harmonic spinors on gravitational instantons”, EMPG, Edinburgh.
- 2019 “Harmonic spinors on gravitational instantons” Conference “*Dirac operators in differential geometry and global analysis*”, Bedlewo, Poland.
- 2018 “Harmonic spinors on gravitational instantons”, SIGRAV conference “*Black holes: Theory and Observations*”, Santa Margherita di Pula.
“Hyperbolic Taub-NUT and monopoles”, Conference “*Low-energy effective dynamics of Skyrmions*”, Leeds.
- 2017 “Instantons, monopoles and the Helmholtz equation”, EMPG, Edinburgh.
“Adiabatic dynamics of instantons on S^4 ”, School of Mathematics, Leeds.
- 2016 “Flow of geometrical structures from Eguchi-Hanson to Taub-NUT space”, *Second Geometric Models of Nuclear Matter Conference*, Canterbury.
“Instantons, monopoles and the Helmholtz equation”, Department of Mathematics, Durham; Department of Physics, Pisa; Department of Physics and Astronomy, Florence.
- 2015 “Adiabatic dynamics of instantons on S^4 ”, Leibniz University, Hannover.
“Circle-invariant instantons and their moduli space”, Conference “*Solitons: Topology, Geometry, and Applications*”, Thessaloniki.
- 2014 “Harmonic forms on ALF gravitational instantons”, EMPG, Edinburgh; Budapest University of Technology and Economics, Budapest.
“Minimal area 2-cycles and harmonic forms in ALF gravitational instantons”, Poster, *Le Studium Conference “Gravitation, Solitons and Symmetries”*, Tours.
- 2013 “Gravitational instantons and charged particles”, DAMTP, Cambridge; Mathematical Institute, Oxford; EMPG, Edinburgh; School of Mathematics, Leeds; Department of Mathematical Sciences, Durham.

Altro

Referaggio	J. Phys. A, Math. Rev.
Società	Membro del G.N.S.A.G.A. (Gruppo Nazionale per le Strutture Algebriche, Geometriche e le loro Applicazioni) per gli anni 2018–2019.
Esperienza organizzativa	Organizzazione dei seminari interni, Leibniz University, Hannover (1 anno). Transferable Skills Officer, CUGMS, Cambridge (1 anno). Entertainment officer, Robinson College MCR, Cambridge (1 anno).
Competenze linguistiche	Italiano (madrelingua), Inglese (eccellente).
Competenze informatiche	Mathematica, Bash scripting, Python, Fortran.

CURRICULUM VITAE

ROBERTO FRINGUELLI

June 14, 2020

PERSONAL DATA

Nationality Italian
Email roberto.fringuelli@helsinki.fi
Website <https://researchportal.helsinki.fi/en/persons/roberto-fringuelli>

RESEARCH INTERESTS

- Moduli spaces of principal bundles and their degenerations.
- Moduli spaces of Higgs bundles.
- Moduli spaces of abelian varieties. Rational points on abelian varieties.
- Picard groups and Brauer groups of algebraic stacks.
- Compactifications of reductive groups.

EMPLOYMENT

June 2020 - May 2022 Postdoctoral Researcher at University of Tor Vergata, Italy.
Mentor: Prof. Antonio Rapagnetta.
Sep 2019 - May 2020 Postdoctoral Researcher at University of Helsinki.
Mentor: Prof. Kari Vilonen.
Feb 2019 - July 2019 Software Developer
Oct 2018 - Dec 2018 Guest Researcher at Max Planck Institute for Mathematics, Germany.
Sep 2016 - Aug 2018 PostDoctoral Research Associate at University of Edinburgh,
Mentor: Dr. Johan Martens

ACADEMIC VISITS

Jan 2018 - Feb 2018 IMPA - Instituto de Matematica Pura e Aplicada, Brazil.
Jan 2020 - Feb 2020 IMPA - Instituto de Matematica Pura e Aplicada, Brazil.

EDUCATION

2013 - 2016 University of Roma 3 - Ph.D.
Advisor: prof. Filippo Viviani.
Thesis: "*The Picard group of the universal moduli space of vector bundles over the moduli space of stable curves*"
2009 - 2011 University of Roma "La Sapienza" - Master degree.
Advisor: prof. Andrea Maffei.
Grade: 110/110 cum laude.
Thesis: "*Affine Grassmannians and moduli space of vector bundles on Riemann surfaces*"
2005 - 2008 University of Bologna "Alma Mater Studiorum" - Bachelor degree.

PREPRINTS/PUBLICATIONS

- *The Brauer group of the universal moduli stack of principal bundles on pointed smooth curves* (joint with Filippo Viviani), in preparation.
- *On the Picard group scheme of the moduli stack of stable pointed curves* (joint with Filippo Viviani), preprint available at <https://arxiv.org/pdf/2005.06920.pdf>.
- *The Picard group of the universal moduli stack of principal bundles on pointed smooth curves* (joint with Filippo Viviani), preprint available at <https://arxiv.org/pdf/2002.07494.pdf>. Submitted.
- *The Brauer Group of the Universal Moduli Space of Vector Bundles Over Smooth Curves* (joint with Roberto Pirisi), International Mathematics Research Notices, 12 2019.
- *The Picard Group of the Universal Abelian Variety and the Franchetta Conjecture for Abelian Varieties* (joint with Roberto Pirisi), Michigan Math. J. **68** (2019), no. 3, 651–671. MR3990175
- *The Picard group of the universal moduli space of vector bundles on stable curves*, Adv. Math. **336** (2018), 477–557. MR3846159

INVITED TALKS

- *The Picard group of the universal moduli stack of principal bundles on smooth curves*, Escola Transguanabara de Geometria Algebrica, 4th - 7th February 2020 UFF (Niteroi), 10th - 13th February IMPA (Rio de Janeiro), Brazil
- *The Picard group of the universal moduli stack of principal bundles on smooth curves*, University of Helsinki, Helsinki (Finland) 13th of November 2019.
- *The Picard group of the universal moduli stack of principal bundles on smooth curves*, Oberseminar, Max Planck Institute for Mathematics, Bonn (Germany), 6th December 2018.
- *Universal compactification of bundles on curves*, Aeneas Conference: Migrating Algebraic Geometry. Christmas Conference, Roma Tre, 20th and 21th of December 2018.
- *The Brauer group of the universal moduli stack of vector bundles on smooth curves* University of Roma 3, Rome (Italy), 27th October 2018.
- *The Picard group of the universal moduli stack of vector bundles on stable curves*, Universidade Estadual de Campinas, Campinas (Brasil), 2nd February 2018.
- *The Picard group of the universal moduli stack of vector bundles on stable curves*, Instituto Nacional de Matematica Pura e Aplicada (IMPA), Rio de Janeiro (Brasil) 7th February 2018.
- *The Picard group of the universal moduli stack of vector bundles on stable curves*, Glen, Algebraic Geometry seminar, University of Liverpool, 3rd February 2017.
- *The Picard group of the universal moduli stack of vector bundles on stable curves*, 2CinC: Cow and Calf in Cardiff, Cardiff University, 23rd - 24th February 2017.
- *The Picard group of the universal moduli stack of vector bundles on stable curves*, Giornate di Geometria Algebrica ed Argomenti Correlati XIII, University of Catania, May 2016.

- *The Picard group of the universal moduli stack of vector bundles on stable curves*, EDGE Seminar, University of Edinburgh, 20th October 2016.

WORKSHOPS/CONFERENCES ATTENDED.

- *School Curves and their Jacobians: State of the Art*, Levico Terme (Trento, Italy), 13-16 February 2013.
- *Advanced School Compactifying Moduli Spaces*. CRM, Barcelona (Spain), 27-31 May 2013.
- *Conference Geometria Algebrica nella Capitale*. University of Rome III, Roma (Italy) 4-6 July 2013.
- *School Conformal Blocks, Vector Bundles on Curves and Moduli of Curves*. University of Rome "La Sapienza", Roma (Italy), 2-6 September 2013.
- *School Curves and equations*, Levico Terme (Trento, Italy), 5-8 February 2014.
- *Minicourses on Stability*, University of Coimbra, Coimbra (Portugal), 10-12 April 2014.
- *School Classical and p -adic Hodge Theories*. Rennes (France), 12-23 May 2014.
- *School Derived Categories* Nantes (France), 23-27 June 2014.
- *School Periods and Motives: Feynman amplitudes in the 21st century*. ICMAT, Madrid (Spain), 30 June-18 July 2014.
- *School Algebraic Varieties and their Moduli*. CRM E. De Giorgi, Pisa (Italy), 25 May–5 June 2015.
- *Research School Pragmatic: Moduli of Curves and Line Bundles*, University of Catania, Catania (Italy), 22 June- 10 July 2015.
- *QUANTMOD-Quantization and Moduli Spaces*, Luxembourg, 9 – 13 January 2017.
- *Workshop on quantum fields, knots and integrable systems*, ICMS, Edinburgh (UK), 27 February - 2 March 2017.
- *Positivity in algebraic and complex geometry*, ICMS, Edinburgh (UK), 24 – 28 April 2017.

TEACHING

- **Spring 2020** A basic course in Algebraic Geometry.
Department of Mathematics and Statistics, *University of Helsinki*.

SERVICE

- EDGE seminar (geometry/topology seminars at University of Edinburgh), Co-organizer with D. Martinelli, September 2017 - August 2018.
- Post-Doc officer at University of Edinburgh (joint with D. Martinelli), September 2017 - August 2018.
- Member of the Good Practice committee (University of Edinburgh), September 2017 - August 2018.

LANGUAGE SKILLS

- **Italian** Mother tongue
- **English** Good
- **French** Basic

REFERENCES

- Prof. Eduardo Esteves. Professor at Instituto Nacional de Matematica Pure a Aplicada (IMPA), Rio de Janeiro, Brazil. Email esteves@impa.br
- Prof. Filippo Viviani (Ph.D. advisor). Associate professor at University of Roma 3, Rome, Italy. Email viviani@mat.uniroma3.it
- Dr. Johan Martens (PostDoc mentor). Lecturer at the School of Mathematics at the University of Edinburgh, Edinburgh, UK. johan.martens@ed.ac.uk.

NIELS KOWALZIG
Curriculum vitae

— ai fini della pubblicazione —

Luogo: Roma
Data: 12-06-2020

CARRIERA SCIENTIFICA

- Gen 2019 Ricercatore del tipo A all’*Dipartimento di Matematica ed Applicazioni, Università di Napoli Federico II*
- Dic 2018–Nov 2018 Assegno di ricerca al *Dipartimento di Matematica GUIDO CASTELNUOVO, Università di Roma La Sapienza*
- Ott 2018–Mag 2018 Assegno di ricerca all’*Dipartimento di Matematica ed Applicazioni, Università di Napoli Federico II*
- Lug 2017–Mar 2017 Tutore (esercitatore) di Geometria I, *Dipartimento di Matematica GUIDO CASTELNUOVO, Università di Roma La Sapienza*
- Feb 2017–Set 2015 Assegno di ricerca al *Dipartimento di Matematica GUIDO CASTELNUOVO, Università di Roma La Sapienza*
- Lug 2015–Ago 2014 Assegno di ricerca all’*Dipartimento di Matematica ed Applicazioni, Università di Napoli Federico II*, nell’ambito del programma *STAR 2013*
- Giu 2014–Giu 2012 *INdAM-Cofund Marie Curie fellow* all’*Istituto Nazionale di Alta Matematica, Roma*, con sede all’*Università di Roma Tor Vergata*
- Dic 2011 *Visiting Research Associate* al *Department of Mathematics, University of Glasgow*
- Mag 2011–Feb 2011 Borsista nel *Granada Excellence Network of Innovation Laboratories (GENIL)*, *Universidad de Granada*
- Dic 2010–Set 2010 Borsista all’*Institut des Hautes Études Scientifiques (IHÉS)*, Bures-sur-Yvette, Francia
- Ago 2010–Mag 2009 Ricercatore ospite all’*Istituto di Matematica Korteweg-de Vries* presso l’*Universiteit van Amsterdam*
- Giu 2009 Dottorato di Ricerca in matematica, presentando una tesi intitolata *Hopf Algebroids and Their Cyclic Theory*
- Apr 2009–Mag 2008 Dottorando al Dipartimento di Matematica dell’*Universiteit Utrecht*, sotto l’egida del Prof. Dr. I. Moerdijk nonché Dr. M. Crainic. Progetto di ricerca su *Bicrossed product bialgebroids and generalised Connes-Moscovici algebras*
- Gen 2008–Apr 2007 Dottorando all’*Istituto di Matematica Korteweg-de Vries* presso l’*Universiteit van Amsterdam*
- Apr 2007–Gen 2007 Borsa *CNRS Marie Curie* per *Groupoids and Stacks in Physics and Geometry*, trimestre all’*Institut Henri Poincaré*, Parigi
- Ott 2006 Membro del *cluster* nazionale di ricerca olandese *Geometry and Quantum Theory (GQT)*
- Dic 2006–Ago 2004 Dottorando all’*Istituto di Matematica Korteweg-de Vries* presso l’*Universiteit van Amsterdam*
- Lug 2004–Mag 2004 Borsista *CNRS predoc* per *K-Theory and Noncommutative Geometry*, trimestre all’*Institut Henri Poincaré*, Parigi
- Apr 2008–Ott 2003 Dottorando all’*Istituto di Matematica Korteweg-de Vries* presso l’*Universiteit van Amsterdam*, sotto l’egida del Prof. Dr. N. P. Landsman (*NWO-EW* progetto pioniere *Quantizzazione, Geometria Noncommutativa, e Simmetria*). Progetto di ricerca su *Algebroidi di Hopf e la loro (Co)omologia*

STUDI DI LAUREA

- Dic 2001 Laurea (vecchio ordinamento) in fisica (*cum laude*, corrispondente a *110 e lode*)
- Set 2001–Ago 2000 Tesi di Laurea in fisica matematica su aspetti di *quantizzazione per deformazione e riduzione algebrica*, sotto l'egida del Prof. Dr. K.-E. Hellwig, Istituto di Fisica Teorica presso la *Technische Universität Berlin* e Dr. M. Pflaum, Istituto di Matematica presso la *Humboldt-Universität zu Berlin*
- Mar 2000–Apr 1996 Frequentato lezioni, esercitazioni, tutoraggi nonché esami in algebra, geometria differenziale e симпlettica, fisica matematica, analisi funzionale, analisi complessa, meccanica quantistica e teoria di quantizzazione, equazioni differenziali alle derivate parziali, relatività generale, astrofisica (cosmologia), fisica teorica e sperimentale, programmazione informatica in C

CONFERIMENTI

- Mar 2018 Conferita l'Abilitazione Scientifica Nazionale per la seconda fascia nel settore concorsuale 01/A2 - Geometria e Algebra;
- Feb 2016 Conferita la *Qualification aux fonctions de Professeur des Universités* in Francia (corrispondente all'Abilitazione Scientifica per tutte le fasce in Italia);
- Giu 2014 Conferita una borsa *INdAM-Cofund Marie Curie*;
- Feb 2012 Conferita la *Qualification aux fonctions de Maître de Conférences* in Francia.

VISITING GRANTS POSTDOTTORALI

- Ott 2020 *Visiting Grant* all'*Institut de Mathématiques, Université Pierre et Marie Curie*, Parigi
- Mag 2018 *Visiting Grant* all'*Institut de Mathématiques, Université Pierre et Marie Curie*, Parigi
- Apr 2018 *Visiting Grant* all'*Institut für Geometrie* presso la *Technische Universität* di Dresda
- Giu 2017 *Visiting Grant* al Dipartimento di Matematica, Politecnico di Torino
- Gen 2017 *Visiting Grant* all'*Institut de Mathématiques, Université Pierre et Marie Curie*, Parigi
- Ott 2016 *Visiting Grant* all'Istituto di Matematica dell'Accademia Nazionale delle Scienze (IMPAN), Varsavia
- Ott 2015 *Visiting Grant* al Dipartimento di Scienze Matematiche presso l'Università di Copenaghen
- Feb 2014 *Visiting Grant* al *Mathematisches Forschungsinstitut (MFO)*, Oberwolfach, Germania
- Gen 2014 *Visiting Grant* all'Istituto di Matematica dell'Accademia Nazionale delle Scienze (IMPAN), Varsavia
- Set 2012 *Visiting grant* al Dipartimento di Matematica, Università di Glasgow
- Lug 2011 *Visiting grant* al Dipartimento di Matematica, Università di Glasgow
- Lug 2010 *Visiting grant* al Dipartimento di Matematica, Università di Glasgow
- Ott 2009 *Visiting grant* al Dipartimento di Matematica, Università di Glasgow

PUBBLICAZIONI SCELTE AI FINI DELLA SELEZIONE

- (1) *Cyclic Gerstenhaber-Schack cohomology*, (con D. Fiorenza), accettato il 08-06-2020 per pubblicazione in *J. of Noncommutative Geometry*; vedasi https://www.emis-ph.org/journals/subm-info.php?subm_nr=20190214132923-UQFQ.
- (2) *Higher brackets on cyclic and negative cyclic (co)homology*, (con D. Fiorenza), accettato il 30-10-2018 per pubblicazione in *Int. Math. Res. Not.*; disponibile su doi:10.1093/imrn/rny241.
- (3) *When Ext is a Batalin-Vilkovisky algebra*, pubblicato in *J. of Noncommutative Geometry* **12** (2018), no. 3, 1081–1131; disponibile su doi:10.4171/JNCG/298.
- (4) *Morita theory for Hopf algebroids, principal bibundles, and weak equivalences*, (con L. El Kaoutit), pubblicato in *Documenta Math.* **22** (2017), 551–609; disponibile su <https://www.math.uni-bielefeld.de/documenta/vol-22/vol-22-eng.html>
- (5) *Duality features of left Hopf algebroids*, (con S. Chemla e F. Gavarini), pubblicato in *Algebr. Represent. Theory* **19** (2016), no. 4, 913–941; disponibile su doi:10.1007/s10468-016-9604-9.
- (6) *Cyclic homology arising from adjunctions*, (con U. Krämer e P. Slevin), pubblicato in *Theor. and Appl. of Categories* **30** (2015), 1067–1095; disponibile su <http://www.tac.mta.ca/tac/index.html#vol30>.
- (7) *Gerstenhaber and Batalin-Vilkovisky structures on modules over operads*, pubblicato in *Int. Math. Res. Not.* **2015** (2015), no. 22, 11694–11744; disponibile su doi:10.1093/imrn/rnv034.
- (8) *Batalin-Vilkovisky algebra structures on (Co) Tor and Poisson bialgebroids*, pubblicato in *J. Pure Appl. Algebr.* **219** (2015), 3781–3822; disponibile su doi:10.1016/j.jpaa.2014.12.022.
- (9) *Batalin-Vilkovisky structures on Ext and Tor*, (con U. Krämer), pubblicato in *J. Reine Angew. Math.* **697** (2014), 159–219; disponibile su doi:10.1515/crelle-2012-0086.
- (10) *Morita base change in Hopf-cyclic (co)homology*, (con L. El Kaoutit), pubblicato in *Lett. Math. Phys.* **103** (2013), no. 6, 665–699; disponibile su doi:10.1007/s11005-012-0600-7.
- (11) *Cyclic structures in algebraic (co)homology theories*, (con U. Krämer), pubblicato in *Homology, Homotopy and Applications* **13** (2011), no. 1, 297–318; disponibile su doi:10.4310/HHA.2011.v13.n1.a11.
- (12) *The cyclic theory of Hopf algebroids*, (con H. Posthuma), pubblicato in *J. of Noncommutative Geometry* **5** (2011), no. 3, 423–476; disponibile su doi:10.4171/JNCG/82.

TESI DI DOTTORATO

- (13) *Hopf algebroids and their cyclic theory*, Tesi di Dottorato, *Universiteit Utrecht* (2009), 200pp., ISBN 978-90-3935-099-7; disponibile su <http://igitur-archive.library.uu.nl/dissertations/2009-0702-200408/UUindex.html>.

PUBBLICAZIONI non SCELTE AI FINI DELLA SELEZIONE

- (14) *A noncommutative calculus on the cyclic dual of Ext*, preprint 2019, arXiv:1912.08145;
(15) *Duality and products in algebraic (co)homology theories*, (con U. Krähmer), pubblicato in *Journal of Algebra* **323** (2010), 2063–2081; disponibile su doi:10.1016/j.jalgebra.2009.12.026.
(16) *Phase space reduction of star products on cotangent bundles*, (con N. Neumaier e M. Pflaum), pubblicato in *Ann. Henri Poincaré* **6** (2005), 485–552; pubblicato il 06-06-2005, Berlin-New York; disponibile su doi:10.1007/s00023-005-0215-y.
(17) *Noncommutative Differential Calculi*, pubblicato in *Oberwolfach Rep.* **11** (2014), no. 1, 613–615; disponibile su doi:10.4171/OWR/2014/11.

CITAZIONI ED INDICE DI CITAZIONI

	<i>MathSciNet</i>	<i>WoS</i>	<i>Scopus</i>	<i>Google Scholar</i>
Numero totale di citazioni	71	68	68	165
H-indice	4	4	4	7

ATTIVITÀ DA REVIEWER

- Dal 2020: *Reviewer* per *Arkiv för Matematik*.
- Dal 2019: *Reviewer* per *Journal of Noncommutative Geometry* nonché *Annali della SNS di Pisa*.
- Dal 2017: *Reviewer* per *Letters in Mathematical Physics* nonché *Journal of Pure and Applied Algebra*
- Dal 2014: *Reviewer* per *Journal of Algebra*, *Journal of Algebra and Its Applications*, nonché *Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)*
- Dal 2013: *Reviewer* per *Communications in Algebra*

ATTIVITÀ DIDATTICHE

- Anno accademico 2019/2020, secondo semestre: lezione (48 ore) di Geometria & Algebra per studenti di ingegneria del primo anno. Facoltà di Ingegneria dell'Università di Napoli Federico II.
- Anno accademico 2019/2020, primo semestre: lezione (48 ore) di Geometria per studenti di architettura del primo anno. Facoltà di Architettura dell'Università di Napoli Federico II.
- Anno accademico 2018/2019, secondo semestre: lezione (48 ore) di Geometria & Algebra per studenti di ingegneria del primo anno. Facoltà di Ingegneria dell'Università di Napoli Federico II.
- Anno accademico 2016/2017, secondo semestre: tutoraggio di Geometria I per studenti di matematica del primo anno. Dip. Matematica dell'Università di Roma La Sapienza.
- Anno accademico 2016/2017, primo semestre: tutoraggio di Algebra Lineare per studenti di matematica del primo anno. Dip. Matematica dell'Università di Roma La Sapienza.
- Anno accademico 2015/2016: esercitazioni di Geometria I per studenti di matematica del secondo anno. Dip. Matematica dell'Università di Roma La Sapienza.
- Cinque anni di continua esperienza didattica (2004–2009), esercitazioni di due (a volte quattro) ore settimanali per Algebra Lineare, Analisi (Vettoriale) nonché Calcolo Infinitesimale principalmente per studenti del primo e secondo anno di matematica, fisica, informatica e chimica. Dip. Matematica delle Università di Amsterdam e di Utrecht.

CONFERENZE E SEMINARI RECENTI

- Conferenza su invito al convegno internazionale *Quantum days in Bologna*, Dip. di Matematica, *Università di Bologna*, Giu 2019;
- Seminario al *Seminario di Geometria*, Dip. di Matematica, *Università di Napoli Federico II*, Apr 2019;
- Seminario su invito al *Seminario di Geometria*, Dip. di Matematica, *Università di Potsdam*, Gen 2019;
- Seminario su invito al *Algebra and Representation Theory Seminar*, Dip. di Matematica, *Università di Roma Tor Vergata*, Nov 2018;
- Conferenza su invito al convegno internazionale *Poisson Geometry and Higher Structures*, INdAM Roma, Set 2018;
- Seminario su invito al *Seminario di Geometria*, Dip. di Matematica, *Università di Potsdam*, Mag 2018;
- Seminario su invito al *Séminaire de Géométrie et Quantification*, Institut Henri Poincaré, Paris, Mag 2018;
- Seminario su invito al *Seminario di Geometria*, Dip. di Matematica, *Technische Universität Dresden*, Apr 2018;
- Conferenza su invito al workshop *From Poisson to Quantum Geometry*, Università degli Studi di Perugia, Mar 2018;
- Seminario su invito al *Seminario di Algebra & Geometria*, Dip. di Matematica, Politecnico di Torino, Giu 2017;
- Conferenza al convegno *Incontro di Combinatoria dei sistemi di radici*, Palazzone della Scuola Normale Superiore di Pisa, Cortona, Mag 2017;
- Lezione su invito al corso di dottorato *Geometria noncommutativa*, Dip. di Matematica, *Università di Napoli Federico II*, Apr 2017;
- Seminario su invito al *Séminaire de Géométrie et Quantification*, Institut Henri Poincaré, Paris, Gen 2017;

- Seminario al *Seminario di Algebra & Geometria*, Dip. di Matematica, Università di Roma La Sapienza, Nov 2016;
- Conferenza su invito al convegno internazionale *Cyclic Homology*, nell'ambito di *Noncommutative geometry: the next generation (Simons Semester)* al Centro Banach, Istituto di Matematica dell'Accademia Nazionale Polacca delle Scienze (IMPAN), Varsavia, Ott 2016;
- Conferenza su invito al convegno internazionale *Noncommutative Geometry and Higher Structures*, Università degli Studi di Perugia, Lug 2016;
- Conferenza su invito al convegno internazionale *Brauer groups, Hopf algebras, and monoidal categories. In honour of Stef Caenepeel on the occasion of his 60th birthday*, Università degli Studi di Torino, Mag 2016;
- Conferenza su invito al convegno internazionale *Hopf Algebras and Related Topics*, Università degli Studi di Torino, Gen 2016;
- Conferenza su invito al masterclass internazionale *Algebraic structures of Hochschild complexes*, Università di Copenhagen, Ott 2015;
- Conferenza su invito al convegno internazionale *Noncommutative Geometry and Higher Structures*, Università di Roma La Sapienza, Set 2015;
- Sette seminari al seminario del gruppo di lettura *Operads e Formalità*, Dip. di Matematica, Università di Napoli Federico II, Set 2014–Giu 2015;
- Quattro seminari al seminario del gruppo di lettura *Coomologia Hopf-Ciclica*, Dip. di Matematica, Università di Roma La Sapienza, Ott 2014–Feb 2015;
- Seminario al *Seminario di Algebra & Geometria*, Dip. di Matematica, Università degli Studi di Torino, Mag 2014;
- Seminario al *Seminario di Algebra*, Dip. di Matematica, Università degli Studi di Ferrara, Apr 2014;
- Quattro seminari al seminario del gruppo di lettura *Coomologia Ciclica e Teoria dell'Indice per Foliazioni*, Dip. di Matematica, Università di Roma La Sapienza, Ott 2013–Mag 2014;
- Seminario al *Seminario di Algebra & Geometria*, Dip. di Matematica, Università di Roma La Sapienza, Apr 2014;
- Conferenza su invito al workshop internazionale *Batalin-Vilkovisky Algebras, Operads, and Hopf Algebroids*, Mathematisches Forschungsinstitut Oberwolfach, Feb 2014;
- Seminario su invito al *Noncommutative Geometry Seminar*, Istituto di Matematica dell'Accademia Nazionale Polacca delle Scienze (IMPAN), Varsavia, Gen 2014.

INIZIATIVE DI GRUPPI DI LAVORO RECENTI

- (Co)organizzazione del seminario del gruppo di lettura *Operads e Formalità*, insieme a Maurizio Brunetti, Francesco D'Andrea, and Davide Franco; Dip. di Matematica, Università di Napoli Federico II, Set 2014–Giu 2015;
- (Co)organizzazione del seminario del gruppo di lettura *Coomologia Hopf-Ciclica*, insieme a Paolo Piazza ed Indrava Roy; Dip. di Matematica, Università di Roma La Sapienza, Ott 2014–Feb 2015;
- (Co)organizzazione del seminario del gruppo di lettura *Coomologia Ciclica e Teoria dell'Indice per Foliazioni*, insieme a Paolo Piazza, Sara Azzali, ed Indrava Roy; Dip. di Matematica, Università di Roma La Sapienza, Ott 2013–Mag 2014.

ATTIVITÀ EDUCATIVE RECENTI

- | | |
|-------------------|---|
| Ott 2016–Nov 2016 | Partecipazione al corso di dottorato <i>Equazioni Differenziali e Gruppi Quantistici</i> , tenuto da V. Toledano Laredo, Dipartimento di Matematica, Università di Roma La Sapienza; |
| Gen 2016–Mag 2016 | Partecipazione al gruppo di lettura <i>Coomologia di Algebre Commutative, il Complesso Cotangente e Deformazioni</i> sotto l'egida di M. Manetti, Dipartimento di Matematica, Università di Roma La Sapienza; |
| Feb 2016–Mag 2016 | Partecipazione al corso di dottorato <i>Quiver Grassmanniane</i> , tenuto da G. Cerulli Irelli, Dipartimento di Matematica, Università di Roma La Sapienza. |

INTERESSI DI RICERCA

Omologia ciclica, algebroidi di Hopf, operads, gruppi quantistici, (étale) groupoidi di Lie, algebre di Lie-Rinehart, strutture superiori di Gerstenhaber e Batalin-Vilkovisky, formalità; algebra omologica, geometria noncommutativa; geometria di Poisson, teoria delle deformazioni.

LINGUE PARLATE

Tedesco (lingua madre), inglese ed italiano (ottima conoscenza, sia scritto sia parlato), francese ed olandese (buono), russo e spagnolo (conoscenza di base), *Großes Latinum* (nove anni di latino).

ULTERIORI INTERESSI

Interessi vividi per architettura, urbanistica, belle arti, viaggi, storia.

Antonio Macchia

Freie Universität Berlin
Arnimallee 2, 14195 Berlin

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@ macchia.antonello[at]gmail.com

Research Interests

Commutative Algebra, Discrete Geometry, Algebraic, Geometric and Topological Combinatorics, Poset Topology

Professional Experience

- Dec 2018 – to date **Post-doctoral researcher**, *Discrete Geometry Group, Freie Universität Berlin*, Germany, funded by the *Einstein Foundation Berlin* under the Einstein Visiting Fellowship of Prof. Francisco Santos (grant EVF-2015-230).
- Aug 2018 **Data Science Training Fellowship**, *Science to Data Science*, London, UK.
intensive training programme, working with the start-up *Shoppar Ltd*: development of a data analysis pipeline and a model framework to predict attention span of customers in a store; proof-of-concept for content optimization using image tagging
- Dec 2016 – Nov 2017 **Post-doctoral researcher**, *Dipartimento di Matematica, Università degli Studi di Bari*, Italy, granted by *INdAM (Istituto Nazionale di Alta Matematica)*, mentor Prof. Margherita Barile.
- Jan 2016 – Nov 2016 **Post-doctoral researcher**, *Centre for Mathematics, Universidade de Coimbra*, Portugal, mentor Prof. Jorge Sentieiro Neves.
- Sep 2014 – Nov 2014 **Visiting researcher**, *Universität Duisburg-Essen*, Germany, guest of Prof. Jürgen Herzog.
- Mar 2014 – Sep 2015 **Post-doctoral researcher**, *Philipps-Universität Marburg*, Germany, funded by a *Postgraduate Scholarship for abroad studies* of Università degli Studi di Bari and a *DAAD Research Grant for post-docs* (Deutscher Akademischer Austauschdienst), mentor Prof. Volkmar Welker.

Education

- Jan 2011 – 15 May 2014 **PhD in Mathematics**, *Università degli Studi di Bari*, Italy.
with a thesis in Commutative Algebra entitled *The Arithmetical Rank of Edge Ideals*, advisor Prof. Margherita Barile
- Sep 2008 – 7 Oct 2010 **Master's Degree in Mathematics**, *Università degli Studi di Bari*, Italy.
with a thesis in Commutative Algebra entitled *Edge Ideals of Cohen-Macaulay Bipartite Graphs*, advisor Prof. Margherita Barile, final grade 110/110 cum laude
- Sep 2005 – 11 Dec 2008 **Bachelor's Degree in Mathematics**, *Università degli Studi di Bari*, Italy.
with a thesis in Noncommutative Algebra entitled *Lie Solvable and Lie Nilpotent Group Rings*, advisor Prof. Onofrio Mario Di Vincenzo, final grade 110/110

Teaching Experience

- Oct 2019 – Feb 2020 **Lecturer for a Seminar course in Discrete Geometry for Master's students**, *Freie Universität Berlin*, Germany, 32 hours.
- Dec 2017 – Jul 2018 **Didactics training, Percorso Formativo 24 CFU**, *Università degli Studi di Bari*.
Eight courses with final exams on pedagogy, psychology and didactics of Mathematics in high school
- 2010 – 2013 **Teaching Assistant for the course in Algebra and Geometry**, *Politecnico di Bari*, Italy.
Nov 2010 - Feb 2011, Dec 2011 - Mar 2011, Dec 2012 - Mar 2013, 20 hours for each course
- Jan 2012 – Mar 2012 **Teacher for a Course in preparation to Mathematics Games**, *Liceo Scientifico "Leonardo da Vinci", Noci*, Italy, 30 hours.
- Feb 2011 – May 2011 **Teacher for a Course in Geometry with Interacting Geometry Software**, *Liceo Scientifico "Galileo Galilei", Bitonto*, Italy, 30 hours.

Invited Talks (selected)

- 12 Feb 2020 Discrete Mathematics Seminar, TU Berlin, Germany
- 11 Sep 2019 Algebraic Combinatorics in Genova, Genova, Italy
- 9 Jul 2019 SIAM Conference on Applied Algebraic Geometry, Bern, Switzerland
- 19 Jun 2019 Summer School on Geometric and Algebraic Combinatorics, Paris, France
- 18 May 2019 Algebra Seminar, Universität Osnabrück, Germany

- 26 Jan 2018 Barcelona Algebraic Geometry Seminar, Universitat de Barcelona, Spain
- 12 Sep 2017 79th Séminaire Lotharingien de Combinatoire, Bertinoro, Italy
- 25 Mar 2017 Colloqui Matematici, Università degli Studi di Bari, Italy
- 25 Nov 2016 Research Seminar Program, UC|UP Joint PhD Program in Mathematics, Porto, Portugal
- 14 Jul 2016 The 6th Combinatorics Day, Almada, Portugal
- 22 Jan 2016 Ecole Normale Supérieure de Lyon, LIP, Lyon, France
- 18 Jan 2016 Colloquium, Universidade de Coimbra, Portugal
- 10 Oct 2015 Combinatorial and Experimental Methods in Commutative Algebra and Related Fields, Osnabrück, Germany
- 1 Sept 2015 Algebra and Combinatorics Seminar, Université Libre de Bruxelles, Belgium
- 11 Jun 2015 AMS-EMS-SPM Joint Meeting 2015, Porto, Portugal
- 8 Apr 2015 Colloqui Matematici, Università degli Studi di Bari, Italy
- 6 May 2014 Discrete Mathematics Seminar, Philipps-Universität Marburg, Germany
- 9 – 13 Sep 2013 Combinatorial Methods in Topology and Algebra (*poster*), Cortona, Italy
- 27 Jun 2013 EACA's Second International School on Computer Algebra and Applications, Valladolid, Spain
- 6 Jun 2013 Canadian Mathematical Society Summer Meeting 2013, Halifax, Nova Scotia, Canada
- 22 Feb 2013 Etna Triangulations and Algebra Meeting, Catania, Italy
- 6 Nov 2012 Graduate Students Seminar, MSRI, Berkeley, California, USA

Workshops and schools (selected)

- 2 – 4 Dec 2019 Co-organizer of the Einstein Workshop on Polytopes and Algebraic Geometry, Berlin, Germany
- 19 – 20 Sep 2019 Einstein Workshop on Real Applied Algebraic Geometry, Berlin, Germany
- 11 – 13 Sep 2019 Algebraic Combinatorics in Genova, Genova, Italy
- 9 – 13 Jul 2019 SIAM Conference on Applied Algebraic Geometry, Bern, Switzerland
- 17 – 28 Jun 2019 Summer School on Geometric and Algebraic Combinatorics, Paris, France
- 29 Oct – 2 Nov 2018 Einstein Workshops on Geometric, Topological and Algebraic Combinatorics, Berlin, Germany
- 10-13 Sep 2017 79th Séminaire Lotharingien de Combinatoire, Bertinoro, Italy
- 14 Jul 2016 The 6th Combinatorics Day, Almada, Portugal
- 13 – 24 Jun 2016 Quinto Encuentro Colombiano de Combinatoria – ECCO 2016, Medellín, Colombia
- 30 May – 3 Jun 2016 Homological and Computational Methods in Commutative Algebra, Cortona, Italy
- 6 – 10 Oct 2015 Combinatorial and Experimental Methods in Comm. Algebra and Related Fields, Osnabrück, Germany
- 10 – 13 Jun 2015 AMS-EMS-SPM Joint Meeting 2015, Porto, Portugal
- 23 – 26 Mar 2015 Third ERC SDModels Workshop – Discrete Models in Geometry and Topology, Berlin, Germany
- 8 – 12 Sep 2014 Meeting On Combinatorial Commutative Algebra, INdAM Conference, Levico Terme, Italy
- 23 Jun – 11 Jul 2014 Pragmatic summer school 2014, Local cohomology and syzygies of affine algebras, Università di Catania, Italy
- 9 – 13 Sep 2013 Combinatorial Methods in Topology and Algebra, INdAM Conference, Cortona, Italy
- 24 – 28 Jun 2013 EACA's Second International School on Computer Algebra and Applications, Valladolid, Spain
- 1 – 7 Jun 2013 International Workshop in Combinatorial Algebra and Special Session on Commutative Algebra and Combinatorics of the CMS Summer Meeting 2013, Halifax, Nova Scotia - Canada
- 20 – 24 Feb 2013 Etna Triangulations and Algebra Meeting, Catania, Italy
- 22 Aug – 16 Nov 2012 *Commutative Algebra and Cluster Algebras Research Program*, Mathematical Sciences Research Institute (MSRI), Berkeley, California, USA
- 18 Jul – 1 Aug 2012 Summer school Discrete Morse Theory and Commutative Algebra, Institut Mittag-Leffler, Stockholm, Sweden
- 17 – 29 Oct 2011 International School on Computational Commutative Algebra and Algebraic Geometry, Messina, Italy

5 – 7 Jul 2011 Combinatorial Methods in Algebraic Geometry and Commutative Algebra, Max Planck Institute, Leipzig, Germany

Technical skills

Programming **C++**, **Python** (numpy, pandas, scikit-learn, matplotlib, seaborn)
Scientific **Macaulay2**, **Sage**, **CoCoA**, **Maple**, **Matlab**
Development **SlackIdeals** package for the computer algebra software system **Macaulay2**, available at <https://bitbucket.org/macchia/slackideals/src/master/SlackIdeals.m2>
OS Microsoft Windows, Linux/Unix
Typography **Office**, \LaTeX

Languages

Italian (native), **English** (advanced C1), **Spanish** (beginner A2), **German** (beginner A2)

Responsabilities, Memberships and Awards

- Member of the working team in the grant application by Francisco Santos of a project for the period 2020-2023 within the “*Plan Estatal de Investigación Científica y Técnica y de Innovación 2017-2020*”, application reference PID2019-106188GB-I00.
- Co-organizer of the *Einstein Workshop on Polytopes and Algebraic Geometry*, 2-4 December 2019, Berlin, Germany.
- Jury member in the PhD defense of Giulia Codenotti, former member of the Discrete Geometry Group at Freie Universität Berlin, 17 January 2020.
- Reviewer for the journals: Electronic Journal of Combinatorics, Journal of Combinatorial Theory Series A, Journal of Pure and Applied Algebra, International Journal of Algebra and Computation. Reviewer for MathSciNet in 2017.
- Co-organizer of the *Discrete Geometry Seminar*, Freie Universität Berlin, Dec 2018 - Today.
- Member of the Italian *National Group for Algebraic and Geometric Structures, and their Applications* (GNSAGA - INDAM) 2013-2020.
- Eligibility for the Contest for 40 scholarships for degree courses in Mathematics 2005-2006, organized by the *Istituto Nazionale di Alta Matematica “Francesco Severi”* (INdAM).
- Third prize in the contest *Scrivere la Scienza*, sponsored by *Grinzane Cavour*, in September 2005, with a paper on prime numbers.
- Participant in the *2017 European Researchers’ Night* in Bari (Italy) with an exhibit on *Flexagons*.
- Interest in the dissemination and popularization of Science and, in particular, of Mathematics.

Ivan Martino | Curriculum Vitæ

Dipartimento di Matematica – Royal Institute of Technology (KTH)
Stoccolma, Svezia

✉ imartino@kth.se • 🌐 www.ivanmartino.com

Esperienze lavorative

Ricercatore <i>Dipartimento di Matematica, Royal Institute of Technology (KTH)</i>	Svezia <i>Dal Feb 2019</i>
Wallenberg Post-doctoral Fellow <i>Dipartimento di Matematica, Northeastern University</i>	USA <i>Gen 2017 – Feb 2019</i>
Zelevinsky Research Instructor <i>Dipartimento di Matematica, Northeastern University</i>	USA <i>Set 2016 – Gen 2017</i>
Swiss National Science Foundation (SNSF) Post-doc <i>Dipartimento di Matematica, University of Fribourg</i>	Svizzera <i>Set 2014 – Aug 2016</i>
Dottorato di Ricerca <i>Dipartimento di Matematica, Stockholm University</i> Relatori: Prof. Torsten Ekedahl ed Prof. Anders Björner.	Svezia <i>Set 2009 – Aug 2014</i>

Formazione

Dottorato in Matematica <i>Stockholm University</i>	Svezia <i>28 Mag 2014</i>
Diploma di Eccellenza <i>Scuola Superiore di Catania, Summa cum Laude</i>	Italia <i>Dic 2010</i>
Laurea Specialistica in Matematica <i>Università di Catania, Summa cum laude</i>	Italia <i>Lug 2009</i>
Diploma Triennale di Eccellenza <i>Scuola Superiore di Catania, Summa cum laude</i>	Italia <i>Mag 2010</i>
Laurea Triennale in Matematica <i>Università di Catania, Summa cum laude</i>	Italia <i>Lug 2007</i>

Premi di Ricerca

Borsa di ricerca Wallenberg <i>Premio di ricerca bandito dalla 'Knut och Alice Wallenbergs Stiftelse'</i>	Svezia <i>Mag 2015</i>
Premio Christer Lech 2013 <i>Premio di ricerca bandito dalla 'Donazione Christer Lech'</i>	Svezia <i>Ott 2013</i>
Premio Angelo Marcello Anile 2009 <i>Premio per la migliore laurea specialistica donato dalla Assoc. Angelo Marcello Anile</i>	Italia <i>Set 2009</i>

1. Attività Scientifica

Borse di Ricerca (in ordine di importanza)

Wallenberg Post-doctoral Fellowship <i>Knut och Alice Wallenbergs Stiftelse.</i> Ammontare della borsa: circa 150.000 Euro.	Svezia Mag 2015
SNSF Post-doc fellowship <i>Swiss National Science Foundation.</i> Ammontare della borsa: circa 150.000 Euro.	Svizzera Set 2014
Alumni Scuola Superiore di Catania <i>Contributo per l'organizzazione della conferenza ET'NA 2017.</i>	Italia Mag 2017
Stiftelsen GS Magnusons fond <i>Kungliga Vetenskapsakademien (KVA), contributo per viaggi di ricerca</i>	Svezia 2009 – 2014
Mats Essens minnesfond <i>Svenska matematikersamfundet, contributo per viaggi di ricerca</i>	Svezia 2013
Knut och Alice Wallenbergs Stiftelsen resefond <i>Svenska matematikersamfundet, contributo per viaggi di ricerca</i>	Svezia 2012
ERSU <i>Ente Regionale per il diritto allo Studio Universitario, contributo per viaggi di ricerca</i>	Italia 2007

Borse di Studio

Scuola Superiore di Catania <i>Borsa di Studio per gli studi triennali e specialistici.</i>	Italia 2004 – 2009
INdAM, Istituto Nazionale di Alta Matematica 'F. Severi' (rifiutata) <i>Borsa di Studio per studi triennali</i>	Italia Set 2004

Cinque rilevanti pubblicazioni scientifiche

- I. Martino, F. Scavia, *Motivic classes of classifying stacks of some semi-direct products*, J. Algebra **544** (2020), 62–74. [MR 4023875](#);
- V. Lanza, I. Martino, *On the codimension of Noether–Lefschetz loci for toric threefolds*, Communications in Contemporary Mathematics, 1950037 (2019). [doi:10.1142/S0219199719500378](#);
- O. Greco, I. Martino, *Cohen-macaulay property and linearity of pinched veronese rings*, J. Commut. Algebra (2019), Advance publication. [euclid:1552464033](#);
- I. Martino, *The Ekedahl invariants for finite groups*, J. Pure Appl. Algebra **220** (2016), no. 4, 1294–1309. [MR 3423448](#);
- O. Greco, I. Martino, *Szygies of the Veronese modules*, Comm. Algebra **44** (2016), no. 9, 3890–3906. [MR 3503390](#);

Soggiorni di ricerca

Centro di Ricerca Matematica Ennio De Giorgi <i>In corrispondenza al programma semestrale 'Perspectives in Lie Theory'</i>	Italia Gen 19 – Feb 28, 2015
Scuola Normale Superiore <i>Collaborazione di ricerca con il gruppo di Geometria Algebrica</i>	Italia Set 2012 – Gen 2013

Organizzazione di Eventi Scientifici di Ricerca

Algebra meets Combinatorics in Neuchatel

Svizzera

Con Elisa Gorla (University of Neuchatel)

15 – 17 Lug 2019

Workshop a seguire la conferenza SIAM a Berna. Evento supportato da *Conférence Universitaire de Suisse Occidentale (CUSO)*.

New developments in matroid theory

Svizzera

Con Alex Fink (Queen Mary University) ed Luca Moci (Università di Bologna) 9 – 13 Lug 2019

Mini simposio della conferenza SIAM - Conference on Applied Algebraic Geometry a Berna (Svizzera).

Independent Research Experience for Undergraduates – Scuola Estiva

USA

Con Emanuele Macrí (Northeastern University)

Estate 2018

Organizzazione della Scuola Estiva per studenti triennali.

Topics in Toric Geometry – Conferenza

USA

Con Emanuele Ventura (Texas A&M University)

21 – 22 Apr 2018

Sessione Speciale della Società Matematica Americana (AMS) organizzata alla Northeastern University (Boston, USA).

Lectures Series in Mathematics – Aaron Lauda

USA

Con Emanuele Macrí (Northeastern University) ed Ivan Losev (Yale)

21 – 23 Feb 2018

Serie di lezioni avanzate tenutesi alla Northeastern University (USA).

Matroids in Boston 2017 – Settimana Tematica

USA

Settimana tematica sulla Teoria dei Matroidi tenutasi alla Northeastern U

11 – 15 Set 2017

ET'nA 2017 – Conferenza e Scuola Estiva

Italia

Con Alex Suciu (Northeastern University)

31 Mag 31 – 4 Giu 2017

ET'nA 2017, Encounter in Topology 'n Algebra, è stata una conferenza, workshop e Scuola Estiva tenutasi alla Scuola superiore di Catania (Italia) e conclusasi con un Networking Day per giovani ricercatori.

Comb., at the crossroads of Algebra, Geom., and Top. – Conferenza

USA

Con Alex Suciu (Northeastern University)

23 – 25 Set 2016

Il Workshop è avvenuto alla Northeastern University (Boston, USA), seguito da una Sessione Speciale della Società Matematica Americana (AMS), avvenuta al Bowdoin College (Brunswick, USA).

Topological Methods - Semestre tematico

Svizzera

Con Emanuele Delucchi (University of Fribourg)

Primavera 2015

Semestre tematico su Metodi Topologici tenutosi alla University of Fribourg e finanziato dalla Swiss National Science Foundation.

Durante gli studi di dottorato.....

ETAM 2013

Italia

Organizzatore di supporto di Etna Triangulations & Algebra Meeting.

20 – 24 Feb 2013

After Pragmatic 2011 - Mini Conference

Svezia

Organizzatore di After Pragmatic.

12 Dic 2011

Questa mini-conferenza è stata organizzata successivamente alla PRAGMATIC 2011 guidata da Prof. Mats Boij ed Prof. Ralf Fröberg. La fortunosa coincidenza che entrambi i professori lavorassero nella città di Stoccolma ha dato l'opportunità di esporre i lavori di ricerca ai propri mentori qualche mese dopo la fine della scuola estiva. La *After Pragmatic* si è ripetuta annualmente da quel momento in poi.

Produzione Scientifica

Tutta la mia produzione scientifica é disponibile gratuitamente su [arXiv.org](https://arxiv.org) e sul mio [Profilo di Google scholar](#). Le seguenti informazioni sono state aggiornate il 9 Giugno 2020.

In preparazione, una versione preliminare del manoscritto disponibile su richiesta.

23. R. Singh, I. Martino, *Groups generated in complex codimension two*;
22. A. Fink, I. Martino, *Shellability for toric arrangements*;
21. A. Borz , I. Martino, *On the relizability of matroids over discrete valuation rings*;

Sottomessi per pubblicazione scientifica.....

20. I. Martino, *Probabilistic values for simplicial complexes*, [arXiv:2001.05820](#);
19. I. Martino, *Efficiency Axioms for simplicial complexes*, [arXiv:2001.00779](#);
18. I. Martino, *Cooperative games on simplicial complexes*, [arXiv:2001.00366](#);
17. A. Borz , I. Martino, *Set of indipencies and Tutte polynomial of matroids over a domain*, [arXiv:1909.00332](#);

In stampa o articoli pubblicati.....

16. I. Martino, F. Scavia, *Motivic classes of classifying stacks of some semi-direct products*, J. Algebra **544** (2020), 62–74. [MR 4023875](#);
15. V. Lanza, I. Martino, *On the codimension of Noether-Lefschetz loci for toric threefolds*, Commun. Contemp. Mathematics, (2019) 1950037. [doi:10.1142/S0219199719500378](#);
14. O. Greco, I. Martino, *Cohen-macaulay property and linearity of pinched veronese rings*, J. Commut. Algebra (2019), Advance publication. [euclid:1552464033](#);
13. I. Martino, R. Singh, *Finite groups generated in low real codimension*, Linear Algebra Appl. **570** (2019), 245–281. [MR 3914915](#);
12. I. Martino, *Face module for realizable \mathbb{Z} -matroids*, Contrib. Discrete Math. **13** (2018), no. 2, 74–87. [MR 3897225](#);
11. I. Martino, *Introduction to the Ekedahl invariants*, Math. Scand. **120** (2017), no. 2, 211–224. [MR 3657413](#);
10. I. Martino, *The Ekedahl invariants for finite groups*, J. Pure Appl. Algebra **220** (2016), no. 4, 1294–1309. [MR 3423448](#);
9. O. Greco, I. Martino, *Syzygies of the Veronese modules*, Comm. Algebra **44** (2016), no. 9, 3890–3906. [MR 3503390](#);
8. I. Martino, *Vertex collapsing and cut ideals*, Serdica Math. J. **41** (2015), no. 2-3, 229–242. [MR 3363603](#);

7. I. Martino, L. Martino, *On the variety of linear recurrences and numerical semigroups*, Semigroup Forum **88** (2014), no. 3, 569–574. [MR 3212606](#);
6. I. Martino, G. Nicosia, *Global optimization for algebraic geometry – computing runge-kutta methods*, Learning and Intelligent Optimization (Berlin, Heidelberg) (Youssef Hamadi and Marc Schoenauer, eds.), Springer Berlin Heidelberg, 2012, pp. 449–454, [doi:DOI: 10.1007/978-3-642-34413-8_43](#);
5. N. Kumar, I. Martino, *An algebraic proof for the identities for degree of syzygies in numerical semigroup*, Matematiche (Catania) **67** (2012), no. 1, 81–89. [MR 2927821](#);
4. N. Kumar, I. Martino, *Regular sequences of power sums and complete symmetric polynomials*, Matematiche (Catania) **67** (2012), no. 1, 103–117. [MR 2927823](#);

Altri lavori accademici.....

3. I. Martino, *Ekedahl Invariants, Veronese Modules and Linear Recurrence Varieties*, Doctoral Thesis – Stockholm University, (2014);
2. I. Martino, *The Ekedahl Invariants for finite groups*, Licentiate Thesis – Stockholm University, (2013);
1. I. Martino, *Signal functions on Semigroups*, Diploma Thesis – Catania Institute of Advanced Study, (2010).

Incarichi di Ricerca

RTG: Algebraic Geometry and Representation Theory

USA

Active Member per la borsa RTG

Da Set 2017

Membro del gruppo di ricerca RTG: Algebraic Geometry and Representation Theory finanziata dal National Science Foundation (NSF).

Esperto Scientifico per FTI Consulting

USA

Esperto Scientifico per FTI Consulting.

Ott 2017

Esperto Scientifico per la Scuola Superiore di Catania

Italia

Commissione scientifica della Scuola Superiore di Catania.

Nov 2016

Membro della commissione scientifica per la migliore tesi di diploma della Scuola Superiore di Catania.

SM'ART - Seminar on Matroids in Algebra, Repr. theory and Topology

Svizzera

Lezione su Teoria dei Matroidi ed Algebra Commutativa

24 – 29 Gen 2016

Borel Seminar 2016, Les Diablerets, Switzerland.

Incarichi Accademici

Pick My Brain – Seminario di ricerca

USA

Organizzatore del seminario di ricerca Pick My Brain.

Da Set 2017

Altri organizzatori: Pablo Soberón e Robin Walters.

Supervisore (Faculty advisor) del Math Club della Northeastern University

USA

Il Math Club è un laboratorio matematico per gli studenti della classe di scienze.

Da Set 2017

Geometry, Algebra, Singularities, Combinatorics – Seminario di Ricerca

USA

Organizzatore del seminario di ricerca (GASC)

Da Set 2016

Altri organizzatori: Chris Beasley, Ana-Maria Castravet, Tony Iarrobino, Egon Schulte and Alex Suciu.

Membro della Commissione sulla Diversità **USA**
Membro della CsD del Dipartimento di Matematica della Northeastern University. Da Set 2016

Supporto alla Commissione sulla Diversità **USA**
Supporto alla CsD della Facoltà di Scienze della Northeastern University. Da Set 2016

Mentore Scientifico **Italia**
Mentore scientifico per gli studenti della SSC. Da Set 2015

KAPPA 2013 - Competizione Matematica **Svezia**
Co-organizzazione della competizione matematica – Kappa 2013. 2012 – 2013

Swedish International Development Cooperation Agency (SIDA) project **Svezia**
Supervisione di tesi specialistiche in Matematica for SIDA. Da Set 2012

SIDA, la National University of Rwanda (NUR) e la Stockholm University offrono la supervisione agli studenti della NUR per progetti di ricerca di studi specialistici in Matematica.

Lavoro come referee scientifico

Referee per le seguenti riviste: Advances in Mathematics, Journal of Combinatorial Theory (Series A), Journal of Number Theory, Rendiconti del Circolo Matematico di Palermo, Journal of Difference Equations and Applications, Symmetry, Journal on the Theory of Ordered Sets and its Applications (Order), and Journal of Integer Sequences.

Breve selezione dei miei seminari di ricerca

2020: Mittag-Leffler Institute; **2019:** Stockholm U (Problem-Solving), KTH (Combinatorics), Uppsala U (Geometry); **2018:** Northeastern U (*Geometry, Physics and Representation Theory*), Maurice Auslander Conference, Florida State U; **2017:** Brown U (Algebra and Algebraic Geometry); **2016:** U de Neuchâtel (Colloquium), Borel Seminar (Matroids in Algebra, Repr. Th. and Top.); **2015:** Fribourg (Oberseminar Geometrie), UCLA, Caltech, U of British Columbia, UC Berkeley, San Francisco State U, U of Miami, Yale; **2014:** Fribourg (Oberseminar Geometrie), IHP (Séminaire Autour des Cycles Algébriques); **2013:** Aalto U (Combinatoric), Christer Lech Lectures; **2012:** MSRI, Vila Real (Iberian Meeting on Numerical Semigroups); **2011:** After Pragmatic Mini-Conference, Linköping (Swedish Mathematical Society), Raleigh (SIAM).

Lista completa dei miei seminari di ricerca

2020

Feb 18: Mittag-Leffler (Algebraic and Enumerative Combinatorics), Mittag-Leffler, Svezia;

Feb 4: Quasi-seminar (Geometry and Topology), Stockholm University, Svezia;

2019

Mar 18: Problem Solving Seminar (Commutative Algebra), Stockholm University, Svezia;

Mar 6: Combinatorics Seminar, KTH, Stockholm, Svezia;

Mar 5: Algebra and Geometry Seminar, University of Uppsala, Uppsala, Svezia;

2018

Sep 20: Geometry, Physics, and Repr.Theory Seminar, Northeastern University, Boston, USA;

Giu 6: SIAM Conference on Discrete Mathematics, University of Colorado, Denver, USA;

Apr 25: Maurice Auslander Conference, Woods Hole, Massachusetts, USA;

Mar 26: Northeastern University, Boston, Massachusetts, USA;

Feb 24: Florida State University, Tallahassee, Florida;

2017

Dic 21: Algebra and Geometry seminar, University of Catania, Italia;

Sep 25: Pre - Talk at GASC seminar, Northeastern University, Boston, MA;

Sep 12: Pick My Brain Seminar, Northeastern University, Boston, MA;

Mar 20: Brown University Algebra and Algebraic Geometry Seminar, Providence, USA;

Mar 1: Graduate Student Seminar of Northeastern University, Boston, USA;

Feb 16: Florida State University, Tallahassee, Florida;

2016

Mag 3: Colloquium, Université de Neuchâtel, Svizzera;

Gen 24: Sem. on Mat. in Algebra, Repr. Theory and Topology, Borel Seminar, Svizzera;

2015

Nov 18: Oberseminar Geometrie, Fribourg, Svizzera;

Ott 23: UCLA, Los Angeles, California, USA;

Ott 22: Caltech, Pasadena, California, USA;

Ott 19: University of British Columbia, Vancouver, Canada, USA;

Ott 16: UC Berkeley, California, USA;

Ott 14: San Francisco State University, California, USA;

Ott 12: University of Miami, Florida, USA;

Ott 8: Yale, New Haven, Connecticut, USA;

Ott 7: Northeastern University, Boston, Massachusetts, USA;

Sep 9: Algebraic Geometry Seminar, Stockholm University, Sweden, USA;

Apr 19: AMS Special Session on Algebro-Geometric Methods in Graph Theory, LV, USA;

Mar 20: Topological Methods Thematic semester, Fribourg, Svizzera;

Feb 11: Algebraic topology, geometric and combinatorial group theory, Pisa, Italia;

Gen 19: Lie Theory and Representation Theory, Pisa, Italia;

2014

Dic 17: Oberseminar Geometrie, Fribourg, Svizzera;

Dic 10: Séminaire Autour des Cycles Algébriques, Paris, Francia;

Dic 2: Arrangements of Hyperplanes, Bremen, Germania;

Sep 8: International meeting on numerical semigroups, Cortona, Italia;

2013

Ott 30: Combinatoric Seminar, Helsinki, Finlandia;

Ott 7: Christer Lech Lectures, Stockholm, Svezia;

Ott 1: Algebraic Geometry Seminar, Uppsala, Svezia;

Giu 10: Advances in Group Theory and Applications 2013, Lecce, Italia;

Mag 27: Syzygies in Berlin, Berlin, Germania;

- Feb 20:** ETAM, Etna Triangulations & Algebra Meeting, Catania, Italia;
- 2012
- Dic 18:** MSRI-program in Commutative Algebra, San Francisco, California, USA;
- Lug 18:** Workshop: Iberian Meeting on Numerical Semigroups, Vila Real, Portogallo;
- Gen 16:** Learning and Intelligent Optimization Conference, LION 6, Paris, Francia;
- 2011
- Dic 12:** After Pragmatic Mini-Conference, Stockholm, Svezia;
- Nov 18:** Swedish Mathematical Society, Linköping, Svezia;
- Ott 6:** SIAM Conference on Applied Algebraic Geometry , Raleigh, North Carolina, USA.

Partecipazione a convegni e conferenze internazionali

- 2020** Gen 13 – Apr 30, **Algebraic and Enumerative Combinatorics**, Mittag-Leffler Institute, Djursholm, Svezia;
- 2019** Lug 15–17, **Algebra meets combinatorics in Neuchatel**, University of Neuchatel, Svizzera; Lug 9–13, **SIAM - Conference on Applied Algebraic Geometry**, University of Bern, Svizzera;
- 2018** Giu 18-22, **Combinatorial Algebraic Geometry Retrospective Workshop**, Fields Institute (Toronto), Canada; Giu 4-8, **SIAM Conference on Discrete Mathematics**, University of Colorado Denver, Denver, Colorado, USA; Apr 25-30, **Maurice Auslander Conference**, Woods Hole, Massachusetts, USA;
- 2017** Ott 13-15, **Algebraic Geometry Northeastern Series**, Northeastern University, MA, USA; Set 11 - 15, **Matroids in Boston**, Northeastern University, USA; July 10-14, **Lefschetz Properties in Algebra, Geometry and Combinatorics**, Institute Mittag-Leffler, Stockholm, Sweden; Mag 31 - June 4, **ET'nA 2017 - Encounter in Topology 'n Algebra**, Scuola Superiore di Catania, Catania, Italy; Mag 1-5, **A View Towards Algebraic Geometry**, in honor of David Eisenbud's birthday, Martha's Vineyard, MA;
- 2016** June 6-8, **TOGA**, Topology and Geometry of Arrangements, University of Fribourg, Switzerland; Mag 3, **Colloquium**, Université de Neuchâtel, Switzerland; January 24-29, Seminar on Matroids in Algebra, Representation theory and Topology, **Borel Seminar**, Les Diablerets, Switzerland;
- 2015** October 17, **Bay Area Discrete Math Day**, San Francisco, California, USA; April 18-19, **AMS Western Sectional Meeting: Special Session on Algebro-Geometric Methods in Graph Theory**, Las Vegas, California, USA; March 25-27, **Let's Matroid!**, Neuchâtel, Switzerland; March-June, **Topological Methods Thematic semester**, Fribourg, Switzerland; February 11-28, **Perspectives in Lie Theory, Algebraic topology, geometric and combinatorial group theory**, Pisa, Italy; January 19-30, **Perspectives in Lie Theory, Lie Theory and Representation Theory**, Pisa, Italy;
- 2014** December 17, **Oberseminar Geometrie**, Fribourg, Switzerland; December 10, **Séminaire Autour des Cycles Algébriques**, Paris, France; December 1-3, **Arrangements of Hyperplanes**, Bremen, Germany Ottobre 23, **The Rolf Schock Prizes**, Stockholm, Sweden; Settembre 8-13, **International meeting on numerical semigroups**, Cortona, Italy; July 7-18, **Graduate Workshop on Moduli of Curves**, Simons Center, New York, USA;
- 2013** Settembre 9-13, **COMETA 2013**, Combinatorial Methods in Topology and Algebra, Cortona,

Italy; June 24 - 28, **FPSAC '13**, the 25th International Conference on Formal Power Series and Algebraic Combinatorics, Paris, France; June 17 - 21, The 11th Nordic Combinatorial Conference (**NORCOM**), Stockholm, Sweden; June 10 - 14, **Advances in Group Theory and Applications** 2013, Lecce, Italy; June 3 - 7, **Facets of Geometry**, Stockholm, Sweden; Mag 27 - 31, **Szygies in Berlin**, Berlin, Germany; February 20-24, **ETAM**, Etna Triangulations & Algebra Meeting, Catania, Sicily;

2012 December, **MSRI** - program in Commutative Algebra, San Francisco, California, USA; Setember 17 - 19, 15 years of **Pragmatic**, Conference on Algebraic Geometry and Commutative Algebra, Catania, Italy; July 18 - 20, Workshop: **Iberian meeting on numerical semigroups**, Vila Real, Portugal; Mag 23 - 25, **Giornate di Geometria Algebrica ed Argomenti Correlati XI**, Pisa, Italy; January 16-20, Learning and Intelligent Optimization Conference, **LION 6**, Paris, France;

2011 November 18 - 19, **Svenska matematikersamfundet's meeting**, Swedish Mathematical Society's meeting, Linköping, Sweden; Ottobre 6 - 9, **SIAM** Conference on Applied Algebraic Geometry, Raleigh, North Carolina, USA; June 20-July 9, Summer School: **Pragmatic 2011**, Catania, Italy;

2007-2010 February 3-5, 2010, Workshop: **Iberian meeting on numerical semigroups**, Granada, Spain; August 2018, Summer school: Scuola Matematica Universitaria, **SMI**; March 17-19, 2008, Workshop: **Iberian meeting on Numerical Semigroups**, Porto, Portugal; 31 August - 4 Set 2007, **SECEVITA**, Summer school in Evolutive Computation and Artificial Life, Italy.

Lettere di raccomandazione relative alla mia attività di ricerca

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Université Paris-Saclay
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91405 Orsay, FRANCE

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2. Attività di Supervisione

Durante il 2012, ho partecipato al programma di sviluppo per la matematica *Swedish International Development Cooperation Agency (SIDA)*. Come risultato di questo sforzo, ho avuto la fortuna e l'onore di essere relatore di tre studenti per la loro tesi specialistica della National University of Rwanda: Manishimwe Alexis, Janvier Ndahimana Rukundo ed Jean Harerimana.

Sono stato relatore per la tesi triennale di Niklas Hedberg (Stockholm University), Jai Aslam (Northeastern University), Zheyang Yu (Northeastern university) ed ho supervisionato la tesi di diploma specialistico di Alessio Borzì per la Scuola Superiore di Catania.

Nell'estate del 2018, ho organizzato una scuola estiva di ricerca finanziata dall'SNF: per questo motivo sono stato supervisore di altri 9 studenti.

Diploma Thesis – Alessio Borzì	KTH
<i>Thesis title: 'Independencies and Tutte for D-matroids'.</i>	<i>Giu 2019</i>
Experiential Educational Direct Study – Zheyang Yu	Northeastern University
<i>Thesis title: 'Introduction to Matroid Theory'.</i>	<i>Dic 2018</i>
REU Student – Alon Duvall	Northeastern University
<i>Together with Brian Hepler</i>	<i>Set 2018</i>
REU Student – Timothy Jackman	Northeastern University
<i>Together with Whitney Drazen</i>	<i>Set 2018</i>
REU Student – Walker Miller-Breetz	Northeastern University
<i>Together with Rahul Singh</i>	<i>Set 2018</i>
REU Student – Benjamin Bonenfant	Northeastern University
<i>Together with Reuven Hodges</i>	<i>Set 2018</i>
REU Student – Christina Nguyen	Northeastern University
<i>Together with Whitney Drazen</i>	<i>Set 2018</i>
REU Student – Zheyang Yu	Northeastern University
<i>Together with Celine Bonandrini</i>	<i>Set 2018</i>
REU Student – Kevin Su	Northeastern University
<i>Together with Jonier Antunes</i>	<i>July 2018</i>
REU Student – Noah Lichtblau	Northeastern University
<i>Together with Mikhail Mironov</i>	<i>July 2018</i>
REU Student – Felipe Castellano-Macias	Northeastern University
<i>Together with Alex Sorokin</i>	<i>Giu 2018</i>
BSc thesis advisor of Jai Aslam	Northeastern University
<i>Thesis title: 'Group actions on Knots'.</i>	<i>Mag 2017</i>
MSc thesis advisor of Jean Harerimana	Stockholm University
<i>Thesis title: 'Some math. models for Pop. Growth and Crowd Motion'.</i>	<i>Giu 2016</i>
BSc thesis advisor of Niklas Hedberg	Stockholm University
<i>Thesis title: 'Derivation of Runge-Kutta order conditions'.</i>	<i>Nov 2013</i>
MSc thesis advisor of Manishimwe Alexis	Stockholm University
<i>Thesis title: 'Hausdorff's measure and the Isoperimetric problem'.</i>	<i>Ott 2013</i>
MSc thesis advisor of Janvier Ndahimana Rukundo	
<i>Thesis title: 'Genetic Algorithms and their applications', Stockholm University</i>	<i>Ott 2013</i>

3. Attività Didattica

Portfolio Didattico

Al KTH – Kungliga Tekniska Högskolan.....

Docente: Matematica Discreta – SF1610 TCOMK (Triennale)

Svezia

Circa sei ore a settimana

Primavera 2020

Corso triennale per gli studenti di Scienze.

Docente: Matematica Discreta – SF1610 TCOMK (Triennale)

Svezia

Circa sei ore a settimana

Primavera 2019

Corso triennale per gli studenti di Scienze.

Relatore of Alessio Borzi

Svezia

Tesi di Diploma Master

Primavera 2019

Parte della tesi é visibile su [arXiv:1909.00332](https://arxiv.org/abs/1909.00332).

Alla Northeastern University.....

Relatore of Zheyang Yu

USA

Progetto di ricerca

Autunno 2018

Breve introduzione alla Ricerca, experiential Ed Directed Study - MATH 4996 (Livello Specialistico).

Docente: Introduzione al ragionamento matematico.– MATH 1365

USA

Circa tre ore a settimana e correzione settimanale degli esercizi assegnati.

Autunno 2018

Introduction to mathematical reasoning, corso triennale per studenti di scienze.

Supervisore: Research Experience for Undergraduates

USA

Supervisore della scuola estiva "Research Projects for undergraduates"

Estate 2018

Studenti: Walker Miller-Breetz, Benjamin Bonenfant, Zheyang Yu, Kevin Su, Christina Nguyen, Noah Lichtblau, Felipe Castellano-Macias, Alon Duvall, Timothy Jackman.

Supervisore ed Organizzatore: Faculty Advisor per il Math Club

USA

Math Club

Autunno 2017

Questo 'Club' è un luogo dove studenti interessati si riuniscono ed esplorano argomenti di matematica al di fuori del tradizionale ambiente accademico. Vista l'incredibile potenzialità, appena nominato, ho trasformato questo Club in un laboratorio matematico, dove i partecipanti potessero essere sì esposti a nuovi argomenti, ma anche supportati da me e da alcuni selezionati membri del dipartimento di matematica.

Relatore of Jai Aslam

USA

Jr/Sr Honors Project – MATH 4970-38489

Primavera 2017

Progetto di tesi.

Relatore: Ricerca per studenti triennali – Math 4020 Undergr. research

USA

Relatore per il corso Ricerca Matematica per studenti triennali

Autunno 2016

Relatore per il requisito fondamentale (Mathematics Capstone course) di *Ricerca Matematica per studenti triennali*.

Docente: Introduzione al ragionamento matematico.– MATH 1365

USA

Circa tre ore a settimana e correzione settimanale degli esercizi assegnati.

Autunno 2016

Introduction to mathematical reasoning, corso triennale per studenti di scienze.

Alla University of Fribourg.....

Algebra e Geometria II – Algebra and Geometry II

Svizzera

Esercitatore, Corso triennale, Due lezioni per settimana e correzioni settimanali

Primavera 2016

Docente, Lezione di Teoria dei Matroidi e di Algebra Comm. **Svizzera**
SM'ART - Borel Seminar 2016 24 – 29 Gen 2016
 Seminar on Matroids in Algebra, Repr. theory and Topology, Les Diablerets

Algebra e Geometria I – Algebra and Geometry I **Svizzera**
Esercitatore, Corso triennale, Due lezioni per settimana e correzioni settimanali Autunno 2015

Docente: The cohomology of toric varieties using shellability **Svizzera**
Docente, Sviluppo del corso e del materiale didattico Primavera 2015
 Corso di dottorato in connessione con il semestre tematico organizzato.

Docente: Resolution of singularities **Svizzera**
Docente, Sviluppo del corso e del materiale didattico Primavera 2015
 Corso di dottorato in connessione con il semestre tematico organizzato.

Docente: Introduction to toric varieties **Svizzera**
Docente, Sviluppo del corso e del materiale didattico Primavera 2015
 Corso di dottorato in connessione con il semestre tematico organizzato.

Combinatorial methods in topology **Svizzera**
Esercitatore Primavera 2015
 Corso di dottorato e di laurea specialistica, Due lezioni per settimana e correzioni settimanali.

Metodi Matematici per l'Informatica – Math. methods in C.S. (MMI) **Svizzera**
Esercitatore Autunno 2014
 Corso di laurea specialistica per informatica, corso triennale per matematici, Due lezioni per settimana e correzioni settimanali.

Alla Stockholm University.....

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Mar – Mag 2014
 Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Gen – Mag 2014
 Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Ott – Dic 2014
 Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Organizzatore: Kappa competition 2013 **Svezia**
Mathematical Competition, 75 hours 2013 – 2014

Matematica I – Matematik I **Svezia**
Esercitatore, Corso triennale per la classe di Scienze, Una lezione a settimana Gen – Mag 2013
 Con correzioni settimanali.

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Gen – Mag 2013
 Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Mar – Mag 2012
 Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Gen – Mag 2012

Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Matematica I – Matematik I **Svezia**
Tutor, Corso triennale per la classe di Scienze, circa due ore a settimana Gen – Mag 2012

Matematica I – Matematik I **Svezia**
Esercitatore, Corso triennale per la classe di Scienze, Una lezione a settimana Set – Dic 2011
Con correzioni settimanali.

Matematica I – Matematik I **Svezia**
Tutor, Corso triennale per la classe di Scienze, circa due ore a settimana Ott – Dic 2011

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Ott – Dic 2011
Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

Matematica I – Matematik I **Svezia**
Tutor, Corso triennale per la classe di Scienze, circa due ore a settimana Gen – Mag 2011

Matematica I – Matematik I **Svezia**
Tutor, Corso triennale per la classe di Scienze, circa due ore a settimana Ott – Dic 2010

Docente: Optimization **Svezia**
Docente, corso specialistico, 8 hours Ott – Dic 2010

Docente: Seminari Avanzati - Extraseminars **Svezia**
Docente, Sviluppo del corso e del materiale didattico Ott – Dic 2010
Corso di laurea triennale per la classe di scienze, Due lezioni per settimana e correzioni settimanali.

All'Università di Catania.....

Geometria **Italia**
Esercitatore, Corso triennale, 150 hours 2008 – 2009

Sviluppo di corsi e materiale didattico innovativo

Seminari Avanzati – Extraseminars. Questo è stato un corso sperimentale nello stile dei *Math Circle* iniziato nell'autunno del 2010, e supportato dal Prof. Boris Shapiro, e continuato fino alla primavera del 2014.

Ho sviluppato delle lezioni supplementari settimanali rivolte agli studenti del primo anno della classe di scienze della Stockholm University. Le lezioni seguivano i gusti e le tendenze degli studenti cercando di coinvolgerli e stimolarli. *L'esperienza è stata un successo.* Io ho selezionato un numero cospicuo di argomenti dall'Algebra alla Topologia, fino alla Geometria Algebrica.

Math Club. Durante l'autunno del 2017 sono stato nominato titolare e supervisore (**Faculty Advisor**) del Math Club della Northeastern University. Questo 'Club' è un luogo dove studenti interessati si riuniscono ed esplorano argomenti di matematica al di fuori del tradizionale ambiente accademico. Vista l'incredibile potenzialità, appena nominato, ho trasformato questo Club in un laboratorio matematico, dove i partecipanti potessero essere sì esposti a nuovi argomenti, ma anche supportati da me e da alcuni selezionati membri del dipartimento di matematica. Questa è stata di sicuro l'esperienza più innovativa della mia didattica.

Corsi per dottorandi. Il primo tentativo di ristrutturare materiale di ricerca in forma di un breve corso avanzato è avvenuto con i tre mini corsi per dottorandi organizzati all'università di Friburgo durante la primavera del 2015.

Ricerca per giovani studenti. L'esperienza più divertente é stata essere supervisore (*Math Department consultant*) di Jai Aslam per il corso 'Ricerca per studenti' (*Math 4020 Undergraduate research*). Sono stato cosí coinvolto in questo ruolo, che, appena avuta la possibilit , ho spinto per l'organizzazione una *Research Experiences for Undergraduates (REU)*

Dettagli dell'esperienza didattica (dalla pi  recente)

- Al KTH, ricopro il ruolo di Ricercatore ed ho un incarico didattico per anno. Sono anche stato supervisore di Alessio Borz  per la Tesi di Diploma specialistica della Scuole Superiore di Catania.
- Alla Northeastern University, la mia posizione combinava due borse di ricerca la *Zelevinsky Research Instructorship* (con obblighi didattici, tre corsi per anno) e la *Wallenberg Post-doctoral fellowship* (senza obblighi didattici). Sono stato docente di un corso triennale, *Introduction to Mathematical Reasoning* e successivamente il mio tempo   stato completamente dedicato alla ricerca scientifica ed al supporto della ricerca del dipartimento. Infatti, sono stato incluso come supervisore (*Math Department consultant*) nel corso avanzato *Math 4020 Undergraduate research* e sono diventato supervisore ed titolare (*Faculty Advisor*) del Math Club della Northeastern University.
- La mia borsa di ricerca finanziata dalla *Swiss National Science Foundation* non aveva obblighi didattici. Nonostante ci  ho offerto il mio aiuto come Esercitatore per un corso a semestre durante la mia permanenza a Fribourg (Svizzera). Ho insegnato *Mathematical methods in computer science* (Corso di laurea specialistica per informatica, corso triennale per matematici), *Combinatorial methods in topology* (corso specialistico), *Algebra and Geometry I* (corso triennale) and *Algebra and Geometry II* (corso triennale).

Durante la Primavera del 2015, ho organizzato, preparato e sono stato docente di tre minicorsi di dottorato in connessione con il semestre tematico *Thematic Semester in Topological Methods* organizzato dal mio gruppo di ricerca A:C&T (Arrangement, Combinatorics and Topology).

- In Svezia, durante il mio dottorato di ricerca, il mio carico di insegnamento corrispondeva a circa tre corsi per anno.
 - Sono stato principalmente docente del corso 'Seminari Avanzati' – *Extraseminars*.
 - Sono anche stato docente, esercitatore e tutor per Matematica I – *Matematik I*: il primo corso di matematica per ogni studente della classe di Scienze alla Stockholm University che include nozioni di base di Algebra, Analisi ed Algebra lineare.)
 - Sono stato docente per il corso specialistico di Ottimizzazione.
 -   importante anche menzionare che ho partecipato nell'organizzazione della competizione matematica *Kappa 2013*.
- In Italia, durante i miei studi specialistici sono stato Esercitatore della Prof. Raciti per il corso di Geometria.

Lettere di referenza riguardo alla mia attivit  didattica

Armin Halilovic

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☎ (33)-169-157-561

4. Divulgazione e Pedagogia

Educazione Pedagogica Universitaria

Teacher training program (2017-2018). Prof. Sandy Blank ed Prof. Lee Lee-Peng sono incaricati di gestire il programma di educazione per gli insegnanti alla Northeastern University. L'audience di questo programma sono i dottoranti dell'università che per la prima volta svolgono il lavoro di assistenti all'insegnamento. Io ero parte della 'commissione pedagogica'.

Esperienza di divulgazione scientifica.

π -day. Sono stato invitato per un seminario di divulgazione il 14 Marzo 2019 al " π -day" organizzato dal Vetenskapens Hus, dalla Stockholm University, dal KTH, e dal Stockholm Matematik Centrum. Il mio talk dal titolo *Carta forbice pietra Spock lucertola* focalizzava l'attenzione di studenti delle elementari e medie sulla proprietà commutativa ed associativa.

Divulgazione matematica. Questa è la lista dei miei seminari di divulgazione matematica con audience studenti della classe di scienze:

- 12 Apr 2018, Independence day: Matroids, Boston, MA;
- 2 Nov 2017, Groups, Boston, MA;
- 19 Ott 2017, Semigroups, Boston, MA;
- 5 Ott 2017, Determinant, Boston, MA;
- 21 Set 2017, Counting lattice points, Boston, MA;
- 7 Set 2017, The coin problem, Boston, MA;
- 11 Apr 2017, La bellezza delle carte (in italian) - Italian Club of Northeastern U, Boston, MA;
- 2 Mar 2017, The Game SET, Boston, MA.

Curriculum Vitae et Studiorum Valerio Melani

Born: January 4, 1988, Rome (Italy)

Citizenship : Italian

Address : via degli agrifogli 10, 50142 Firenze (Italy)

Tel : +39 3407994360

Mail : valerio.melani@outlook.com

Languages : Italian (native), French and English (fluent), Spanish (basics)

Education and working experience:

- January 2019 - present : research fellow (RTDa), Università di Pisa.
- March 2017 - December 2018 : PostDoc student, Università di Milano.
- October 2016 - February 2017 : PostDoc student at MPIM, Bonn.
- 2013 - 2016 : PhD student on “Poisson and coisotropic structures in derived algebraic geometry”, Université Paris Diderot (Paris VII) / Università di Firenze, under the supervision of Gabriele Vezzosi and Grégory Ginot.
- 2013 : M1 in Cognitive Science at the École Normale Supérieure de Paris (France).
- 2012 : Master degree in Mathématiques Fondamentales, Université Pierre et Marie Curie (Paris VI), mention très bien.
- 2009-2013 : student at the École Normale Supérieure de Paris (France).
- 2009 : Bachelor’s degree in mathematics, Università di Pisa (Italy).
- 2006-2009 : student at the Scuola Normale Superiore in Pisa (Italy).
- 2006 : High school degree at “Liceo Scientifico Statale Augusto Righi” in Rome (Italy).

Awards :

- 2016 : “Qualification” for the “Maître de Conférences” position in France.
- July 2009 : Accepted at the École Normale Supérieure in Paris (France).
- September 2006 : Accepted at the Scuola Normale Superiore in Pisa (Italy).
- July 2006 : Silver medal at the International Mathematical Olympiad in Ljubljana (Slovenia).
- May 2006 : Gold medal at the Italian Mathematical Olympiad.
- April 2006 : Honorable mention at the Italian Physics Olympiad.

Textes mathématiques :

- “Shifted coisotropic correspondences”, with Rune Haugseng and Pavel Safronov, accepted for publication in Journal of the Institute of Mathematics of Jussieu (2020).
- “Formality criteria for algebras over operads”, with Marcel Rubió, Journal of Algebra 529 (2019).
- “The derived moduli stack of shifted symplectic structures”, with Samuel Bach, Rendiconti del Sem. Mat. dell’Università di Padova 141 (2019).
- “Derived coisotropic structures II : stacks and quantization”, with Pavel Safronov, Selecta Mathematica 24-4 (2018).
- “Derived coisotropic structures I : affine case”, with Pavel Safronov, Selecta Mathematica 24-4 (2018).

- “Poisson bivectors and Poisson brackets on derived affine stacks”, *Advances in Mathematics*, Vol 288, (2016).
- PhD thesis “Poisson and coisotropic structures in derived algebraic geometry”, under the direction of Gabriele Vezzosi and Grégory Ginot.
- September 2012 : mémoire de M2 “Algèbres affines, opérateurs vertex et catégorification”, under the direction of D. Hernandez, in french.
- June 2010 : first year project at the ENS Paris “Zéros de polynômes sur les corps finis”, with Cyril Bouvier and under the direction of B. Schraen, in french.
- September 2009 : bachelor’s degree thesis “Quivers and root systems: Gabriel’s theorem and the Ringel algebra” under the direction of G. Gaiffi, in italian.

Selected Invited talks :

- December 2019 : “Tate geometry and higher dimensional Grassmannians”, during the workshop *Derived Geometry, Symplectic Geometry, and Representation Theory* held at the University of Montpellier.
- September 2019 : “Weinstein’s Poisson category and derived algebraic geometry”, during the conference *Friends in Algebraic Geometry* held at the University of Turin.
- February 2019 : “Introduction to derived Poisson geometry”, during the winter school “Geometry, Algebra and Combinatorics of Moduli Spaces and Configurations III” held in Dobbiaco.
- November 2018 : Mini-course “Symplectic and Poisson derived geometry”, Kavli IPMU Tokyo, during the workshop “Noncommutative deformations and moduli spaces”.
- May 2018 : “Weinstein’s Poisson category in derived algebraic geometry”, Université de Lorraine.
- May 2018 : “Formality criteria for algebras over operads”, University of Turin.
- November 2017: “Derived Poisson geometry”, during the conference “GTM seminar: Commutative Algebra and Algebraic Geometry” held at the Polytechnic University of Turin.
- November/December 2017: Mini-course on “Derived algebraic geometry”, University of Milan.
- January 2017 : “Coisotropic structures in derived algebraic geometry”, Université d’Angers.
- October 2016 : “Coisotropic structures in derived algebraic geometry”, University of Florence.
- September 2016 : “Derived Poisson and coisotropic structures”, University of Lille.
- July 2016 : “Derived Poisson and coisotropic structures”, during the conference *Non-commutative Geometry and Higher Structures* held at the University of Perugia.
- March 2016 : “Derived Poisson and coisotropic structures”, University of Luxembourg.
- January 2016 : “Derived Poisson geometry”, University of Copenhagen.
- December 2015 : “On shifted Poisson structures”, Oberwolfach seminar on derived algebraic geometry.
- September 2015 : “Examples of derived moduli stacks and formal derived geometry”, mini-course at the summer school in derived algebraic geometry held at the University of Pavia.
- May 2015 : “Derived algebraic geometry and Poisson structures”, algebraic topology seminar at Université Paris 13.

- April 2015 : “Shifted Poisson structures on affine derived stacks”, during the conference Symplectic techniques in derived algebraic geometry held at the University of Warwick.
- February 2015 : “Derived Poisson structures in derived algebraic geometry”, Università di Firenze.

Teaching experience :

- 2013/2014 : assistant teacher for the course “Linear algebra” (second year students) at UPMC (Paris 6)
- 2014/2015 : assistant teacher for the courses “Elements of mathematics” (first year students), “Elements of arithmetics” (second year students), “Linear algebra” (second year students) at UPMC (Paris 6)
- 2015/2016 : assistant teacher for the course “Elements of mathematics” for first year students at UPMC (Paris 6)
- 2018/2019 : teacher for the courses “Linear Algebra” and “Discrete mathematics and linear algebra” for first year students, Università di Pisa.
- 2019/2020 : teacher for the courses “Linear Algebra” for first year students and “Category theory” for fourth year students, Università di Pisa.

Organizational activities :

- Organizer (with E. Colombo and P. Stellari) of the workshop “Two Days of Algebraic Geometry” held in Milan, 21-22 June 2018.
- Organizer (with D. Lejay and M. Porta) of the learning seminar “Derived algebraic geometry”, IMJ-PRG, 2013-2014.

CURRICULUM VITAE

Samuele Mongodi

Dati Anagrafici e Contatti

Nome: Samuele Mongodi

Data di nascita: 29/07/1984

Luogo di nascita: Luino (VA), IT

Indirizzo (Casa): Via Bazzini 9, 20131 - Milano (IT)

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Esperienze lavorative e Formazione

01/03/2017 - presente Ricercatore TD-a presso il Politecnico di Milano.

01/09/2015 - 28/2/2017 PostDoc presso l'Università di Pisa, nel progetto *FIRB* 2012
“Geometria Differenziale e Teoria Geometrica delle Funzioni” (unità di Pisa: Di-
namica olomorfa e teoria geometrica delle funzioni), sotto la supervisione del prof.
Marco Abate (P.I. per l'unità di Pisa prof. Jasmin Raissy).

15/03/2014 - 15/03/2015 PostDoc presso l'Università di Roma Tor Vergata, nei progetti
PRIN “Varietà reali e complesse: geometria, topologia e analisi armonica” e *ERC*
“Holomorphic Evolution Equations” (sotto la supervisione del prof. Filippo Bracci).

2012–2014 PostDoc presso la Scuola Normale Superiore di Pisa, nel progetto “*FIRB -*
Analysis and Beyond” (sotto la supervisione del Dr. Carlo Mantegazza)

Lug 2012 Diploma di Perfezionamento, votazione 70/70 cum laude, discutendo una tesi dal
titolo *Applications of metric currents to complex analysis*. Relatore: prof. Giuseppe
Tomassini

2009–2011 Allievo del corso di Perfezionamento presso la Scuola Normale Superiore in Pisa.
Relatore: prof. Giuseppe Tomassini.

Lug 2008 Diploma di Licenza della Scuola Normale Superiore, votazione 60/60 cum Laude.

2006–2008 Studente del corso di Laurea Specialistica in Matematica presso l'Università di
Pisa. Laurea Specialistica in Matematica nel Giugno 2008, votazione 110/110 cum
Laude, discutendo la tesi *Forme differenziali e correnti metriche su spazi complessi*
. Relatore: prof. Giuseppe Tomassini.

2003–2006 Studente del corso di Laurea Triennale in Matematica presso l'Università di
Pisa. Laurea Triennale conseguita nel Luglio 2006, votazione 110/110 cum Laude,
discutendo la tesi *Tecniche di uniformizzazione per superfici di Riemann*. Relatore:
prof. Fulvio Lazzeri.

Lug 2003 Diploma di Maturità, votazione 100/100, presso il “Liceo Scientifico Vittorio
Sereni”, Luino (VA), Italy.

Lingue straniere

Ho una buona conoscenza dell'inglese scritto e orale ed una conoscenza basilare del tedesco. Durante il corso Ordinario presso la Scuola Normale Superiore, ho frequentato corsi di entrambe le lingue, equiparabili, in termini di livelli europei, al livello B2 di tedesco e al livello C1 di inglese.

Esperienza didattica

- 2019/20 - *Geometria ed Algebra Lineare* (80 ore per studenti di Ingegneria - titolare del corso).
- 2018/19 - *Geometria ed Algebra Lineare* (80 ore per studenti di Ingegneria - titolare del corso).
- 2017/18 - *Geometria ed Algebra Lineare* (80 ore per studenti di Ingegneria - titolare del corso).
- 2016/17 - *Analisi Matematica 2 (esercitazioni)* (44 ore per studenti di Ingegneria) - titolare del corso: prof. F. Colombo.
- 2014/15 - *Geometria ed Algebra Lineare (supporto alla didattica)* titolare del corso: prof. F. Bracci.
- 2014/15 - *Analisi Matematica 1 (tutoraggio)* titolare del corso: prof. G. Bellettini.
- 2013/14 - *Analisi Matematica 1* (120 ore per studenti di Ingegneria - titolare del corso).
- 2012/13 - *Geometria ed Algebra Lineare (esercitazioni)* (36 ore per studenti di Ingegneria Edile-Architettura) - titolare del corso: prof. Marco Forti
- 2011/12 - *Analisi Complessa in più Variabili (esercitazioni)* (per studenti di Matematica in SNS) titolare del corso: prof. Giuseppe Tomassini
- 2011/12 - *Geometria ed Algebra Lineare (esercitazioni)* (36 ore per studenti di Ingegneria Edile-Architettura) - titolare del corso: prof. Marco Forti
- 2010/11 - *Geometria Iperbolica Complessa (esercitazioni)* (18 ore per studenti di Matematica in SNS) - titolare del corso: prof. Giuseppe Tomassini
- 2010/11 - *Geometria ed Algebra Lineare (esercitazioni)* (24 ore per studenti di Ingegneria Edile) - titolare del corso: prof. Marco Forti
- 2009/10 - *Geometria Differenziale Complessa (esercitazioni)* (50 ore per studenti di Matematica in SNS) - titolare del corso: prof. Giuseppe Tomassini
- 2009/10 - *Algebra Lineare (esercitazioni)* (24 ore per studenti di Ingegneria Biomedica) - titolare del corso: prof. Marco Forti
- 2008/09 - *Geometria (esercitazioni)* (24 ore per studenti di Ingegneria Biomedica) - titolare del corso: prof. Marco Forti

Informazioni e materiale per i corsi elencati si trovano sulla pagina <http://uz.sns.it/~samuele/dida.html>.

Per i corsi più recenti, è disponibile il set completo delle lezioni (registrate live).

Olimpiadi della Matematica

Dal 2004, collaboro con l'Unione Matematica Italiana alla realizzazione delle Olimpiadi Italiane di Matematica; dal 2009 sono membro della Commissione Olimpiadi

dell'UMI. Tale collaborazione si concretizza nella stesura dei testi di gara per le competizioni, nella correzione dei compiti nelle fasi nazionali e nella selezione delle rappresentative italiane per le Balkan Mathematical Competitions (BMO), per i Romanian Masters in Mathematics (RMM) e per le Olimpiadi Internazionali di Matematica (IMO).

Dal 2005, ho svolto presso varie scuole superiori in tutta Italia corsi intensivi di preparazione, su argomenti di matematica "elementare" (geometria sintetica, aritmetica, combinatoria, algebra). Tali lezioni sommano a circa 600 ore di insegnamento in più di 200 scuole.

Contratti e collaborazioni esterne

- 01/10/2016 - 15/03/2017 - *McGrawHill Education (Italy) S.r.l.*: creazione, selezione e digitalizzazione di esercizi per la piattaforma online dei libri *Matematica e statistica* (M. Abate) and *Matematica* (V. Villani).
- 01/03/2016 - 30/08/2016 - *Istituto dell'Enciclopedia Italiana Treccani*: revisione di lezioni multimediali destinate alle scuole superiori, sulla maggior parte dei contenuti del programma scolastico delle superiori.
- 2/04/2015 - 31/05/2015 - *Unione Matematica Italiana*: organizzazione (parte scientifica) di prove per la selezione delle rappresentative italiane in varie competizioni matematiche internazionali
- 22/12/2014 - 31/12/2014 - *Consorzio Interuniversitario Sistemi Integrati per l'Accesso*: catalogazione del database di domande per test di ingresso (argomento: Matematica) per le Facoltà di Ingegneria e Architettura.
- 23/07/2012 - 31/07/2012 - *Consorzio Interuniversitario Sistemi Integrati per l'Accesso*: revisione dei test di ingresso (argomento: Matematica) per le facoltà di Ingegneria e Architettura per il 2012.
- 11/07/2011 - 20/07/2011 - *Consorzio Interuniversitario Sistemi Integrati per l'Accesso*: revisione dei test di ingresso (argomento: Matematica) per le facoltà di Ingegneria e Architettura per il 2011.
- 22/02/2010 - 31/07/2010 - *Unione Matematica Italiana*: organizzazione (parte scientifica) di prove per la selezione delle rappresentative italiane in varie competizioni matematiche internazionali.

Seminari scelti

- Ancona, Set2019 - 50min *Complex structures on real associative algebras and slice-regular functions* nella conferenza “Quaternioni sul Conero II”.
- Pavia, Set2019 - 20min *Minimal kernels and the Levi problem* nel XXI Congresso dell’Unione Matematica Italiana.
- Trento, Giu 2019 - 50min *Olomorfia delle funzioni slice-regolari* all’Università di Trento.
- Lille (FR), Apr2019 - 50min *Minimal kernels and compact analytic objects in complex surfaces* presso l’Università di Lille.
- Parma, Apr2019 - 50min *Holomorphicity of slice-regular functions* presso l’Università di Parma.
- Milano, Lug 2018 - 50min *A geometric intuition for the zeroes of slice-regular functions of a quaternionic variable* nella conferenza “GMT seminar: some topics in commutative algebra and algebric geometry”.
- Stavanger (NO), Mag 2018 - 45min *On the classification of weakly complete surfaces* nella conferenza “NORDAN 2018”.
- Aveiro (PT), Mar2017 - 30min *Carleson measures and Toeplitz operators on bounded strictly pseudoconvex domains* nella conferenza “18th annual Workshop on Applications and Generalizations of Complex Analysis”.
- Pisa, Feb2017 - 30min *Carleson measures and Toeplitz operators on bounded strictly pseudoconvex domains* presso la Scuola Normale Superiore (Pisa)
- Milano, Apr2016 - 1 hr *Misure di Carleson e operatori di Toeplitz in domini strettamente pseudoconvessi limitati* presso il Politecnico di Milano.
- Beirut (LB), Dic2015 - 1hr *Horizontal Sobolev sets in the Heisenberg group* presso il Center for Advanced Mathematical Sciences - American University of Beirut.
- Beirut (LB), Dic2015 - 1hr *Rigidity results for solitons of the Ricci-Bourguignon flow* per il Analysis and Geometry Seminar del Dipartimento di Matematica - American University of Beirut.
- Pisa, Mar2015 - 40min *Weakly complete surfaces* nella conferenza “KAWA 6 - Komplex Analysis Weeklong School and Workshop VI (EMS Summer School)”
- Vienna (AT), Dic2014 - 1hr *Weakly complete complex surfaces* per il ciclo Complex Analysis Seminars della Facoltà di Matematica - Universität Wien.
- Parma, Feb2014 - 1hr *Classification of weakly complete complex surfaces* per il Seminario di Geometria del Dipartimento di Matematica - Università di Parma.
- Göteborg (SE), Set2013 - 45min *Metric currents in complex geometry* per il ciclo Complex Analysis Seminars (KASS) presso la Chalmers University.
- Levico, Ott 2012 - 30min *Correnti metriche positive e catene olomorfe negli spazi di Hilbert* nella conferenza “Progressi Recenti in Geometria Reale e Complessa”.
- Levico, Giu 2012 - 15min $\bar{\partial}$ -equation in Banach spaces nella conferenza “CR Geometry and PDEs - V - In honor of J.J. Kohn in his 80th Birthday”.
- Levico, Giu 2011 - 30min *Currents on singular complex spaces: the $\bar{\partial}$ equation* nella conferenza “Complex Analysis and Geometry - XX”.

Conferenze e convegni

Come organizzatore

Sono stato tra gli organizzatori delle seguenti conferenze:

- “Complex Analysis and Geometry in Pisa” 5-6 Ott 2018, Pisa (Italy) - nel comitato scientifico.

Come partecipante

Negli ultimi anni, ho regolarmente preso parte alle seguenti conferenze, organizzate ogni uno o due anni.

- *Progressi Recenti in Geometria Reale e Complessa*, Levico (TN Italy), Ott2008-2010-2012-2014
- *Complex Analysis and Geometry*, Levico (TN, Italy), Giu2009-2011-2013-2015-2017-2019
- *KAWA - Complex Analysis With Applications - School and Workshop*, Toulouse-Albi (France) in Gen2010-2013- Mar2016, Marseille (France) in Gen2011 - Mar2014, Barcelona (Spain) in Feb2012, Pisa (Italy) in Mar2015
- *CR Geometry and PDEs*, Levico (TN, Italy), Giu2010-2012

Alcune altre conferenze a cui ho preso parte

- “Colloque international d’analyse complexe”, 13 - 17 Lug 2009 - Luminy (Marseille, France)
- “ERC School on Analysis in Metric Spaces and Geometric Measure Theory”, 10 - 14 Gen2011, Pisa (Italy)
- “Geometric Methods of Complex Analysis”, 10 - 16 Apr2011 - Oberwolfach (Germany)
- “A conference in honor of Pierre Dolbeault”, 2-4 Giu2014 - Paris (France)
- “Summer School and Workshop: Differential Forms on Singular Complex Spaces”, 30 Giu - 4 Lug2014 - Bonn (Germany)
- “Winter School of Sanya School in Complex Analysis and Geometry”, 11-14 Gen2016 - Sanya (China)
- “Recent Advances in Complex Differential Geometry”, 13-22 Giu, 2016 - Toulouse (France)
- 5th Workshop on “Varietà reali e complesse: geometria, topologia e analisi armonica”, 24-26 Feb, 2017- Pisa (Italy)
- 18th annual Workshop on “Applications and Generalizations of Complex Analysis”, 31 Mar-1 Apr2017 - Aveiro (Portugal)
- 6th Workshop on “Varietà reali e complesse: geometria, topologia e analisi armonica”, 1-3 Feb2018 - Pisa (Italy)

- “NORDAN 2018”, 25-27 Mag 2018 - Stavanger (Norway)
- “Genova-Torino-Milano seminar: some topics in commutative algebra and algebraic geometry”, 17-18 Lug 2018 - Milano (Italy)
- “NORDAN 2019”, 3-5 Mag 2019 - Amsterdam/Lunteren (Netherlands)
- XII Congresso dell’Unione Matematica Italiana, 2-7 Set2019 - Pavia
- “Quaternioni sul Conero II”, 12-13 Set 2019 - Ancona

Periodi di ricerca

- Annullato causa epidemia Covid-19 Université Paris-Diderot - UFR de Mathématiques, Paris, dal 15/04/2020 al 14/05/2020, invitato dal dr. Matteo Ruggiero (come chercheur invité).
- Annullato causa epidemia Covid-19 Université de Lille, dal 26/03/2020 al 8/4/2020, invitato dal dr. Fabrizio Bianchi
- Research in Pairs (CIRM), Trento, dal 03/06/2019 al 10/06/2019, con il dr. Fabrizio Bianchi (Univ. Lille)
- Université Paris-Diderot - UFR de Mathématiques, Paris, dal 23/04/2019 al 02/05/2019, invitato dal dr. Matteo Ruggiero
- Università di Roma TorVergata - Dipartimento di Matematica, Roma, dal 25/02/2019 al 01/03/2019, invitato dal dr. Leandro Arosio.
- Università di Pisa - Dipartimento di Matematica, Pisa, dal 07/06/2018 al 12/06/2018, invitato dal prof. Marco Abate.
- American University of Beirut - Mathematics Department, Beirut, Lebanon, dal 30/11/2015 al 6/12/2015, invitato dal dr. Florian Bertrand.
- Universität Wien - Fakultät für Mathematik, Vienna, Austria, dal 30/11/2014 al 7/12/2014, invitato dal dr. G. Dalla Sala.
- Università di Parma - Dipartimento di Matematica, Parma, dal 11/02/2014 al 13/02/2014, invitato dal prof. A. Saracco.
- Chalmers University, Göteborg, Sweden, dal 8/9/2013 al 15/9/2013, invitato dal prof. R. Berman.

Pubblicazioni

1. (with M. Abate and J. Raissy) *Toeplitz operators and skew Carleson measures for weighted Bergman spaces on strongly pseudoconvex domains*, Journal of Operator Theory to appear (2020)

2. [capitolo di libro] (with G. Tomassini) *Minimal kernels and compact analytic objects in complex surfaces* In: Breaz D., Rassias M. (eds) *Advancements in Complex Analysis*. Springer, Cham, 2020, doi: 10.1007/978-3-030-40120-7_9
3. *Holomorphicity of slice-regular functions*, *Complex Anal. Oper. Theory* **14**, 37 (2020), doi: 10.1007/s11785-020-00996-2.
4. (with Z. Slodkowski) *Domains with a continuous exhaustion in weakly complete surfaces*, *Mathematische Zeitschrift*, to appear (2020), doi: 10.1007/s00209-020-02466-z
5. (with F. Colombo, M. Peloso, S. Pinton) *Fractional powers of the noncommutative Fourier's law by the S -spectrum approach* *Mathematical Methods in the Applied Sciences*, **42**(5), pp. 1662 – 1686, doi:10.1002/mma.5466
6. (with F. Colombo) *The Cauchy transform in the slice hyperholomorphic setting and related topics* *Journal of Geometry and Physics*, vol. 137 (2019), p. 162-183, doi:10.1016/j.geomphys.2018.12.007.
7. *Weakly complete domains in Grauert-type surfaces* *Annali di Matematica Pura e Applicata*, vol 198 (2019), no. 4, pp 1185 – 1189, doi: 10.1007/s10231-018-0814-0
8. (with G. Tomassini) *Oka principle for Levi-flat manifolds* *Bollettino dell'UMI*, vol. 12 (2019), pp 177 – 196, doi: 10.1007/s40574-018-0174-0
9. (with C. Mantegazza and M. Rimoldi) *The Cotton Tensor and the Ricci Flow Geometric Flows*, Volume 2, Issue 1 (2017), pp 49–71 DOI:10.1515/geofl-2017-0001
10. (with Z. Slodkowski and G. Tomassini) *Some properties of Grauert-type surfaces* *Int. J. Math.* **28**, 1750063 (2017), 16 pages, DOI: 10.1142/S0129167X1750063X
11. (with Z. Slodkowski and G. Tomassini) *On weakly complete surfaces* *C R. Math. Acad. Sci. Paris* Volume 353 (2015) no. 11, pp 969 – 972 DOI: 10.1016/j.crma.2015.08.009
12. (with Z. Slodkowski and G. Tomassini) *Weakly complete complex surfaces*, *Indiana Univ. Math. J.*, vol. 67 (2018), p. 899-935, doi: 10.1512/iumj.2018.67.6306
13. (with G. Catino and L. Mazzieri) *Rigidity of gradient Einstein shrinkers*, *Communications in Contemporary Mathematics*, Volume 17 (2014) Issue 6. DOI: 10.1142/S0219199715500467
14. (with G. Tomassini) *1-complete semiholomorphic foliations*, *Trans. Amer. Math. Soc.* 368 (2016), no. 9, 6271 - 6292. DOI: 10.1090/tran/6543
15. (with G. Tomassini) *Transversally pseudoconvex semiholomorphic foliations* *Rend. Lincei Mat. Appl.* Volume 26, Issue 1 (2015), pp 23 - 36. DOI: 10.4171/RLM/689
16. (with V. Magnani and J. Malý) *A low rank property and nonexistence of higher dimensional horizontal Sobolev sets*, *The Journal of Geometric Analysis*, July 2015, Volume 25, Issue 3, pp 1444-1458, DOI: 10.1007/s12220-014-9478-1
17. *Positive metric currents and holomorphic chains in Hilbert spaces*, *Revista Matemática Iberoamericana*, **31** (2015), no. 4, 1231–1262, doi: 10.4171/RMI/867

18. (with A. Saracco) *Non compact boundaries of complex analytic varieties in Hilbert spaces*, Complex Manifolds. Volume 1, Issue 1, ISSN (Online) 2300-7443, DOI: 10.2478/coma-2014-0002, July 2014
19. *Some application of metric currents to complex analysis*, Manuscripta Mathematica July 2013, Volume 141, Issue 3-4, pp 363-390, DOI: 10.1007/s00229-012-0575-9
20. (with E. Amar) *On L^r hypoellipticity of solutions with compact support of the Cauchy-Riemann equation*, Annali di Matematica Pura ed Applicata, August 2014, Volume 193, Issue 4, pp 999-1018, DOI: 10.1007/s10231-012-0312-8
21. (PhD Thesis) *Applications of metric currents to complex analysis*

Preprints

1. *Complex structures and slice-regular functions on associative algebras*, preprint, <https://arxiv.org/abs/1907.00876>

In preparazione (bozza disponibile su richiesta)

1. *Slice-regular functions as covering maps*
2. (with F. Bianchi) *Minimal kernel and Levi currents in complex surfaces*
3. (with L. Arosio, M. Ruggiero) *Birational properties of tangent to the identity germs without non-degenerate singular directions*
4. (with G. Dall'Ara) *A stratification of the boundary of a pseudoconvex domain* (working title)

Come Editore

1. Proceedings of the meeting *Complex Analysis and Geometry in Pisa*, Pisa (Italy) October 5-6, 2018 - Riv.Mat.Univ.Parma, Volume **11** - Number 1 - 2020 (Edited by: S. Mongodi, A. Saraco).

Partecipazione a gruppi di ricerca

ERC GeMeThNES "Geometric Measure Theory in non-Euclidean Spaces" (P.I. prof. Luigi Ambrosio)

PRIN 2010-2011 "Varietà reali e complesse: geometria, topologia e analisi armonica"

Premi e riconoscimenti

Contributo INDAM - 2020 Finanziamento di 800€ dall'INDAM per partecipare ad una conferenza ed una scuola a Notre Dame (IN - USA) e a Indianapolis (IN - USA) - cancellate per l'epidemia Covid-19 .

ASN 2018-2020 Abilitazione scientifica nazionale a professore di seconda fascia.
Validità: 07/05/2019 – 07/05/2025.

LYSM funding - 2019 Finanziamento di 700€ dal Laboratorio Interazionale Associato LYSM (Laboratoria Ipazia per le Scienze Matematiche) per organizzare una visita di due settimane a Parigi per una collaborazione scientifica con il dr. Matteo Ruggiero (Paris VII).

CIRM RIP grant - 2019 Finanziamento del CIRM (Trento) per un periodo di Research in Pairs di 1 settimana con il dr. Fabrizio Bianchi.

Contributo INDAM - 2018 Finanziamento di 2000€ dall'INDAM per organizzare la conferenza "Complex Analysis and Geometry in Pisa".

FABRR - 2017 Finanziamento ministeriale di 3000€ per la ricerca.

Ammissione al Perfezionamento (SNS) - 2008 Primo classificato (su sei ammessi) al concorso di ammissione al corso di Perfezionamento in Matematica presso la Scuola Normale Superiore.

Ammissione al Corso Ordinario (SNS) - 2003 Vincitore di un posto nel Corso Ordinario della Classe di Scienze presso la Scuola Normale Superiore.

Filippo Morabito

Associate professor

Department of Mathematical Sciences, KAIST,
Korea Advanced Institute of Science and Technology,
291 Daehak-ro, Yuseong-gu, 34141, Daejeon, South Korea.

&

Associate member

CIAS, Korea Institute for Advanced Study, School of Mathematics,
Hoegi-ro 87, Dongdaemun-gu, Seoul 130-722, South Korea.

Education

- May 2008, **Ph.D. in Mathematics**, University Paris-Est Marne-la-Vallée, France & University Roma III, Italy.
- February 2004, **M.S. in Mathematics**, University of Pisa, Italy.
- April 2001, **M.S. in Electronic Engineering**, University of Reggio Calabria, Italy.

Research interests

Differential geometry, geometric analysis, differential equations on manifolds.

Publications

1. *Index and nullity of the Gauss map of the Costa-Hoffman-Meeks surfaces*, **Indiana University Mathematics Journal**, Vol. 58, 2, 2009, 677-707.
2. *An end-to-end construction for singly periodic minimal surfaces* (with L. Hauswirth and M. M. Rodríguez), **Pacific Journal of Mathematics**, Vol. 241, No. 1, 2009, 1-61.
3. *About a family of deformations of the Costa-Hoffman-Meeks surfaces*, **Bulletin of the Brazilian Mathematical Society**, Vol. 40(3), 2009, 433-454.
4. *A Costa-Hoffman-Meeks type surface in $H^2 \times R$* , **Transactions of the American Mathematical Society**, Vol. 363, No. 1, 2011, 1-36.
5. *Saddle Towers and minimal k -noids in $H^2 \times R$* (with M. M. Rodríguez), **Journal de l'Institut de Mathématiques de Jussieu**, vol. 11 (2), 2012, 333-349.

6. *Non-periodic Riemann examples with handles*, (with M. Traizet), **Advances in Mathematics**, 229, 2012, 26-53.
7. *Classification of special rotational Weingarten surfaces of minimal type in $S^2 \times R$ and $H^2 \times R$* (with M. M. Rodríguez), **Mathematische Zeitschrift**, 273, 379-399, 2013.
8. *Height estimate for special Weingarten surfaces in $M^2(c) \times R$* , **Proceedings of the American Mathematical Society**, Series B, 1, 14-22, 2014.
9. *Higher genus capillary surfaces in the unit ball of R^3* , **Boundary Value Problems**, 130, 2014.
10. *Radial and non-radial solutions to an elliptic problem on annular domains in Riemannian manifolds with radial symmetry*, **Journal of Differential Equations**, 258, 1461-1493, 2015.
11. *Singly periodic free boundary minimal surfaces in a solid cylinder of R^3* , **Discrete Continuous Dynamical Systems**, Series A, 35, n. 10, 4987-5001, 2015.
12. *Delaunay type domains for an overdetermined elliptic problem in $S^n \times R$ and $H^n \times R$* , (with P. Sicbaldi), **ESAIM Control, Optimisation and Calculus of Variations**, 22, n. 1, 1-28, 2016.
13. *Free boundary surfaces and saddle tower minimal surfaces in $S^2 \times R$* , **Journal of Mathematical Analysis and Applications**, 443, 478-525, 2016.
14. *Asymptotically radial solutions to an elliptic problem on expanding annular domains in Riemannian manifolds with radial symmetry*, **Boundary Value Problems**, 124, 2016.
15. *Symmetry breaking bifurcations for an overdetermined boundary value problem on an exterior domain issued from electrodynamics*, **Nonlinear Analysis**, 158, 1-22, 2017.
16. *Towering phenomena for the Yamabe equation on symmetric manifolds*, (with A. Pistoia, G. Vaira), **Potential Analysis**, 47, n. 1, 53-102, 2017.
17. *Bounded and unbounded capillary surfaces derived from the catenoid*, **Discrete Continuous Dynamical Systems**, Series A, 38 n.2, 589-614, 2018.
18. *Singly periodic free boundary minimal surfaces in a solid cylinder of $H^2 \times R$* , **Nonlinear Analysis**, 171, 208-237, 2018.
19. *Periodic minimal surfaces embedded in R^3 derived from the singly periodic Scherk minimal surface*, **Communications in Contemporary Mathematics**, 22, 1, 2020, 1850075.

Submitted articles

1. *Periodic free boundary minimal surfaces embedded in a slab of R^3* , submitted to **Journal of Differential Equations**.
2. *Symmetry breaking bifurcations for two overdetermined boundary value problems with non-constant Neumann condition on exterior domains in R^3* , submitted to **Communications in Partial Differential Equations**.

Excellent paper award, College of Science, KAIST, December 2014 and December 2015.

Referee for Bulletin of Brazilian Mathematical Society, Geometry and Topology, Transactions of the American Mathematical Society, Transformation groups, Pacific Journal of Mathematics, Communications on Pure and Applied Analysis.

Taught courses

At Université Paris-Est

2007/08, Linear Algebra, Analysis 2, Calculus and integration;

2008/09, Calculus in Banach spaces, Introduction to mathematical thinking, Linear Algebra;

At Korea University

2012, Fall semester: Calculus I, Differential Geometry (Graduate);

2013, Spring semester: Ordinary differential equations, Riemannian Geometry (Graduate);

At KAIST

2013, Fall semester: Combinatorial Topology, Complex Function Theory (Graduate);

2014, Spring semester: Calculus I, Riemannian Geometry (Graduate);

2014, Fall semester: Calculus II, Differential Geometry (Graduate);

2015, Spring semester: Calculus I, Analysis on Manifolds;

2015, Summer semester: Individual study course;

2015, Fall semester: Differential Geometry (Graduate);

2016, Spring semester: Matrix Groups, Riemannian Geometry (Graduate);

2016, Summer semester: Individual study course;

2016, Fall semester: Differential Geometry (Graduate);

2016, Fall semester: Individual study course;

2017, Spring semester: Calculus I, Analysis on Manifolds;

2017, Fall semester: Differential Geometry (Graduate);

2018, Spring semester: Differential Equations and Applications;

2018, Fall semester: Introduction to Differential Geometry, Differential Geometry (Graduate);

2019, Winter semester: Individual study course;

2019, Spring semester: Differential Equations and Applications.

Employment

09/2017 - 08/2020 **Associate Professor**

Department of Mathematical Sciences, KAIST, Daejeon, South Korea.

since 11/2012 **Associate member**

School of Mathematics, KIAS Korea Institute for Advanced Study, Seoul, South Korea.

09/2013 - 08/2017 **Assistant Professor**

Department of Mathematical Sciences, KAIST, Daejeon, South Korea.

09/2012 - 08/2013 **Assistant Professor (non tenure track)**

Department of Mathematics, Korea University, Seoul, South Korea.

09/2010 - 08/2012 **Research fellow**

School of Mathematics, KIAS Korea Institute for Advanced Study, Seoul, Korea.

12/2009 - 08/2010 **Post-doc CNRS**

Laboratoire de Mathématiques et Physique Théorique, Université de Tours, France.

09/2009 - 11/2009 **Invited researcher**

Instituto de Matemáticas Interdisciplinar, Universidad Complutense de Madrid, Spain.

09/2008 - 08/2009 **ATER**

Université Paris-Est Marne-la-Vallée, France.

09/2007 - 08/2008 **ATER**

Université Paris-Est Marne-la-Vallée, France.

Sabbatical leave

ICTP, International Centre for Theoretical Physics, 01/09/2019 - 07/05/2020.

Grants

2016, extension of the Grant by National Research Foundation (South Korea). Supported project: Overdetermined boundary value problems in Riemannian manifolds. Amount: 80,000,000 won.

2013, Grant by National Research Foundation (South Korea). Supported project: Overdetermined boundary value problems in Riemannian manifolds. Amount: 82,000,000 won.

2011, Grant for Scientific Collaboration Hubert Curien by Egide (Paris, France) in South Korea (with J. Choe, B. Daniel, L. Hauswirth).

2006, Grant by Université Franco-Italienne for doctoral students enrolled in two Ph.D. Programs (in a French university and in an Italian university) simultaneously.

Invitations

Université Aix-Marseille, France (3 times, average length of the stay: 30 days);

Université Paris-Est Marne-la-Vallée, France, 26 days;

Université de Tours, France, 20 days;

Università Roma "Sapienza", Italy, 7 days.

Talks

- *Minimal surfaces in H^3* , February 2020, ICTP, Trieste, Italy.
- *Two overdetermined boundary value problems with non-constant Neumann condition on exterior domains in \mathbb{R}^3* , July 2018, KIAS, Seoul, Korea.
- *Asymptotically radial solutions to an elliptic problem on expanding annular domains in Riemannian manifolds with radial symmetry*, July 2018, 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Taipei, Taiwan.
- *Delaunay type domain for an overdetermined elliptic problem in $H^n \times R$ and $S^n \times R$* , November 2017, 2nd Pan Pacific International Conference on Topology and Applications, Busan, South Korea.
- *Periodic minimal surfaces embedded in \mathbb{R}^3 derived from the singly periodic Scherk minimal surface*, June 2017, PDE's Seminar, KAIST, Daejeon, Korea.

- *Extremal domains for the first eigenvalue in a general compact Riemannian manifold*, December 2016, Geometry Workshop, Yong Pyong, Korea.
- *Introduction to minimal surfaces theory*, December 2016, Symposium Korea-Italy on Mathematics, KAST and Accademia dei Lincei, KIAS, Seoul, Korea.
- *Symmetry breaking bifurcations for an overdetermined problem on an exterior domain*, November 2016, PDE's Seminar, KAIST, Daejeon, Korea.
- *An overdetermined problem on an exterior domain*, July 2016, KIAS, Seoul, Korea.
- *Capillary and free boundary surfaces obtained by deformation of minimal surfaces*, Asymptotic problems: elliptic and parabolic issues, June 2015, Vilnius, Lithuania.
- *Higher genus capillary surfaces in the unit ball of R^3* , November 2014, KIAS, Seoul, Korea.
- *Costa-Hoffman-Meeks surfaces*, November 2014, KIAS, Seoul, Korea.
- *Splitting Theorems, Symmetry Results and Overdetermined Problems for Riemannian Manifolds*, April 2014, KIAS, Seoul, Korea.
- *From constant mean curvature surfaces to overdetermined elliptic problems*, March 2014, Colloquium, Dept. Mathematical Sciences, KAIST, Daejeon, Korea.
- *From Constant mean curvature surfaces to overdetermined elliptic problems*, March 2014, Geometry Seminar, Pusan University, Pusan, Korea.
- *Delaunay type domains for an overdetermined elliptic problem*, October 2013, Annual meeting of Korean Mathematical Society, Seoul, Korea.
- *Higher genus capillary surfaces in a unit ball of R^3* , October 2013, Colloquium, Dept. Mathematical Sciences, KAIST, Daejeon, South Korea.
- *Delaunay type domains for an overdetermined elliptic problem*, April 2013, KIAS, Seoul, South Korea.
- *Overdetermined problems in Riemannian manifolds*, February 2013, KAIST, Daejeon, South Korea.
- *Construction of minimal surfaces in riemannian manifolds*, October 2012, University of Laval, Québec, Canada.
- *Non-periodic Riemann type surfaces with handles*, October 2012, Annual meeting of Korean Mathematical Society, Daejeon, Korea.
- *Construction of minimal surfaces in riemannian manifolds*, August 2012, University of Surrey, Guildford, United Kingdom.
- *Surfaces of Costa-Hoffman-Meeks type in $H^2 \times R$* , September 2011, Summer school in Partial Differential Equations, Caputh, Germany.
- *Gluing technique in minimal surfaces theory*, July 2011, Geometry seminar, Korea Institute for Advanced Study, Seoul, Korea.
- *Higher genus minimal surfaces in R^3 with infinitely many parallel planar ends*, May 2011, Differential Geometry Workshop, Ewha Woman's University, Seoul, Korea.
- *Classification of rotational special Weingarten surfaces of minimal type in $H^2 \times R$ and $S^2 \times R$* , November 2010, Geometry seminar, Korea Institute for Advanced Study, Seoul, Korea.

- *Construction of new examples of minimal surfaces in R^3 with infinitely many horizontal planar ends*, November 2010, Instituto de Matematica Pura e Aplicada, Rio de Janeiro, Brazil.
- *New examples of minimal surfaces in $H^2 \times R$* , October 2010, Geometry seminar, Korea Institute for Advanced Study, Seoul, Korea.
- *On a family of complete embedded minimal surfaces in R^3 with infinitely many horizontal planar ends*, July 2010, 5th Workshop of Differential Geometry, Korea Institute for Advanced Study, Seoul, Korea.
- *Saddle towers dans $H^2 \times R$* , May 2010, Séminaire de Géométrie, Institut de Mathématiques de Jussieu, Paris.
- *Saddle towers dans $H^2 \times R$* , February 2010, Séminaire de Géométrie, Laboratoire de Mathématiques et Physique Théorique, Université de Tours, France.
- *Surfaces of Costa-Hoffman-Meeks type in the space $H^2 \times R$* , September 2009, Workshop de Jovenes Investigadores, Facultad de Matemáticas, Universidad Complutense de Madrid, Spain.
- *Index and Nullity of the Gauss map of the Costa-Hoffman-Meeks surface*, May 2008, Giornate di Geometria Algebrica e argomenti correlati, Levico Terme, Italy.
- *Surfaces of Costa-Hoffman-Meeks type in the space $H^2 \times R$* , May 2008, Geometry Seminar, Departamento de Geometría y Topología of the University of Granada, Spain.
- *Surfaces de type Costa-Hoffman-Meeks dans l'espace $H^2 \times R$* , January 2008, Séminaire de Géométrie, Institut de Mathématiques de Jussieu, Paris.

References

- Prof. William Meeks III,
Dept. of Mathematics, University of Massachusetts at Amherst, USA,
profmeeks@gmail.com.
- Prof. William Minicozzi,
Department of Mathematics, MIT, USA,
minicozz@math.mit.edu
- Prof. Laurent Mazet,
Department of Mathematics, University of Tours, France,
laurent.mazet@math.cnrs.fr

Conferences and schools

Summer school in Semiclassical Analysis, 29 July - 16 August 2019, Northwestern University, Evanston, USA.

Microlocal Analysis and Applications, 14-21 June 2019, Shanghai, China.

Young PDE's @ Rome, 19-22 February 2018, Roma, Italia.

Geometric Inequalities on Riemannian Manifolds and related topics, 23-26 November 2016, Busan, South Korea.

Equadiff 2015, 6-10 July 2015, Lyon, France.

Asymptotic problems: elliptic and parabolic issues, 1-5 June 2015, Vilnius, Lithuania.

Variational methods for Non-linear PDE's, ICM Satellite Conference, 4-8 August 2014, KAIST.

9th KIAS Summer School on Differential Geometry, 23-27 June 2014, South Korea.

Winter School in Geometric PDE's, 02-13 July 2012, University of Queensland, Brisbane, Australia.

School and Conference on Geometric Analysis, 11-29 June 2012, ICTP, Trieste, Italy.

6th KIAS Winter School on Differential Geometry, 6-10 February 2012, South Korea.

Summer school in Partial Differential Equations, 12-16 September 2011, Caputh, Germany.

Ricci Solitons Days in Pisa 2011, 4-8 April 2011, Pisa, Italy.

Submanifold theory and applications, 28 March - 2 April 2011, Sevilla, Spain.

Recent Developments in Nonlinear Partial Differential Equations: Part I, 28 Feb - 4 Mar 2011, Hong Kong.

Algebraic, geometric and analytic aspects of surface theory, 5-10 April 2010, Buzios, Brazil.

School of Differential Geometry, 9-13 June 2008, International Centre for Theoretical Physics, Trieste, Italy.

Ricci curvature and complex geometry, during the trimester about "Ricci curvature and Ricci flow" organized at Institut Henri Poincaré, 2-6 June 2008, Paris.

Introduction to Ricci curvature, by Sylvestre Gallot (Université de Grenoble), during the trimester about "Ricci curvature and Ricci flow" organized at the Institut Henri Poincaré, 14-25 April 2008, Paris.

Constant mean curvature and minimal surfaces international congress, 20-25 August 2007, Buzios, Brazil.

Géométrie et EDP, 18-22 June 2007, C.I.R.M., Luminy, France.

04/06/2020

Roberto Pirisi

Curriculum Vitae

Dati Personali

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Pagina <https://people.kth.se/~pirisi/>
Personale
Nato: 11/12/1986, Cagliari, Italy

Posizioni Accademiche

07/2018-
presente **Postdoctoral fellow**, KTH STOCKHOLM, Stoccolma, Svezia, <https://www.kth.se/math>.
Supervisore: David Rydh
09/2016-
07/2018 **Postdoctoral fellow**, UNIVERSITY OF BRITISH COLUMBIA, Vancouver, BC (Canada),
<https://www.math.ubc.ca/>.
Supervisori: Kai Behrend, Zinovy Reichstein
08/2015-
07/2016 **Postdoctoral Fellow**, UNIVERSITY OF OTTAWA, Ottawa, ON (Canada), <http://science.uottawa.ca/mathstat/en>.
Supervisore: Kirill Zaynullin

Istruzione

11/2011-
07/2015 **Phd in Matematica**, *Scuola Normale Superiore*, Italia, 70/70 cum laude.
Titolo tesi: Cohomological invariants for algebraic curves. Relatore: Angelo Vistoli
03/2009-
09/2011 **Laurea Magistrale in Matematica**, *Università di Pisa*, Italia, 110/110 cum laude.
Titolo tesi: A survey on diophantine results. Relatore: Roberto Dvornicich
09/2005-
02/2009 **Laurea Triennale in Matematica**, *Università di Pisa*, Italia, 110/110 cum laude.
Titolo tesi: Classificazione delle rappresentazioni del gruppo simmetrico. Relatore: Rocco Chirivì

Insegnamento

Estate 2018 **Istruttore**, *Math 200-921: Multivariable calculus*, University of British Columbia, <https://www.math.ubc.ca/Ugrad/index.shtml>.
Primavera
2017 **Istruttore**, *Math 101: Integral Calculus with application to Physical Sciences and Engineering*, University of British Columbia, <https://www.math.ubc.ca/~gerg/teaching/101-Winter2017/>.
Autunno 2016 **Istruttore**, *Math 104: Differential Calculus with Applications to Commerce and Social Sciences*, University of British Columbia, <https://www.math.ubc.ca/~shawn/Math104-184/>.
Primavera
2016 **Istruttore**, *Math 1302B: Mathematical Methods II*, University of Ottawa, <http://mysite.science.uottawa.ca/hsalmasi/mat1302/mat1302.htm>.
Autunno 2015 **Istruttore**, *Math 2355: Introduction to Geometry*, University of Ottawa.

Primavera 2015 **Assistente**, *Algebra 2*, Università di Pisa, <http://people.dm.unipi.it/gianni/pagina-algebraII.htm>.

Primavera 2014 **Assistente**, *Algebra 2*, Università di Pisa.

Autunno 2013 **Istruttore**, *Matematica di base (Matematica 0)*, Università di Pisa.

Articoli e Preprint

- [1] **Cohomological invariants for algebraic stacks**, 2018, *Tran. Amer. Math. Soc.*, vol. 370, no. 3, DOI <https://doi.org/10.1090/tran/7006>.
- [2] **Cohomological invariants for hyperelliptic curves of even genus**, 2017, *Algebraic Geometry*, vol. 4, issue 4, DOI 10.14231/AG-2017-022.
- [3] **Cohomological invariants of hyperelliptic curves of genus three**, 2018, *Documenta Mathematica*, vol. 23, DOI 10.25537/dm.2018v23.969-996.
- [4] **The Picard group of the universal abelian variety and the Franchetta conjecture for abelian varieties**, (con R.Fringuelli), 2019, *Michigan Math. J.*, 68,(3). DOI 10.1307/mmj/1564106669
- [5] **On the motivic class of the classifying stack of G_2 and the Spin groups**, (con M.Talpo), 2017, *Inter. Math. Res. Not.*, Volume 2019, Issue 10. DOI <https://doi.org/10.1093/imrn/rnx208>
- [6] **The Brauer group of the universal moduli space of vector bundles over smooth curves**, (con R.Fringuelli), 2018, Accettato su *Int. Math. Res. Not.*, visibile su arXiv: 1805.05369. DOI <https://doi.org/10.1093/imrn/rnz300>
- [7] **Gabriel's theorem and birational geometry**, (with J.Calabrese), 2018, Accettato su *Proc. Amer. Math. Soc.*, visibile su arXiv:1804.04078.
- [8] **A complete description of the cohomological invariants of even genus hyperelliptic curves**, (with A.Di Lorenzo), 2019, Sottomesso, visibile su arXiv:1911.04005.
- [9] **Brauer groups of moduli of hyperelliptic curves, via cohomological invariants**, (with A.Di Lorenzo), 2020, Sottomesso, visibile su arXiv:2002.11065.
- [10] **Cohomological invariants of algebraic curves**, 2015, Tesi di dottorato, Visibile su <https://people.kth.se/~pirisi/thesis.pdf>.

Interessi di Ricerca

- Invarianti coomologici di stack di moduli e gruppi algebrici
- Gruppi di Picard, gruppi di Brauer e anelli di Chow di stack di moduli
- Invarianti tipo Casson di 3-varietà
- Classi motiviche di stack classificanti
- Teorie dei cicli e teorie coomologiche orientate
- Geometria birazionale dal punto di vista non commutativo

Talk su Invito

- 12/06/2020 **Quadratic forms, Linear algebraic groups and Beyond**, *Zoom seminar series*, Titolo: *Brauer groups of moduli of hyperelliptic curves, via cohomological invariants.*
- 05/03/2020 **Seminario di geometria algebrica**, *Scuola Normale Superiore di Pisa, Pisa, Italia*, Titolo: *Brauer groups of moduli of hyperelliptic curves, via cohomological invariants.*
- 16/01/2019 **Algebra and geometry seminar**, *KTH Royal Institute of Technology, Stockholm, Svezia*, Titolo: *An arithmetic theory of characteristic classes for moduli problems.*

- 19/09/2018 **Algebraic geometry seminar**, *Scuola Normale Superiore di Pisa, Pisa, Italia*, Titolo: *Birational geometry and Gabriel's theorem*.
- 14/04/2018 **Spring 2018 AMS meeting, Special session on Moduli Spaces**, *Portland State University, Portland, Oregon, USA*, Titolo: *The Brauer group of the moduli stack of vector bundles on smooth curves*.
- 23/08/2017 **Lie Theory, Cohomology and Geometry in Wildrose Country**, *University of Alberta, Edmonton, Alberta, Canada*, Titolo: *On the motivic class of the classifying stacks of G_2 and the Spin groups*.
- 19/09/2016 **Algebraic geometry seminar**, *University of British Columbia, Vancouver, British Columbia, Canada*, Titolo: *The Franchetta conjecture for abelian varieties*.
- 26/05/2016 **Giornate di Geometria Algebrica e Argomenti Correlati XIII**, *Università di Catania, Catania, Italia*, Titolo: *The Franchetta conjecture for abelian varieties*.
- 07/12/2015 **CMS Winter meeting**, *Montreal, Quebec, Canada*, Titolo: *Cohomological invariants of algebraic stacks*.
- 15/09/2015 **The Use of Linear Algebraic Groups in Geometry and Number Theory**, *Banff Centre, Banff, Alberta, Canada*, Titolo: *Cohomological Invariants for stacks of algebraic curves*.
- 29/04/2014 **Algebraic geometry seminar**, *Rice University, Houston, Texas, USA*, Titolo: *Cohomological Invariants for stacks of algebraic curves*.

Poster Session

- 11/09/2017 **WAGS Fall 2017**, *UCLA, Los Angeles, California, USA*, Titolo: *The motivic class of BG_2 and $BSpin_n$* .
- 14/10/2017 **British Algebraic Geometry Meeting III**, *University of Cambridge, Cambridge, UK*, Titolo: *The motivic class of BG_2 and $BSpin_n$* .
- 02/06/2015 **G.A.E.L. XXIII**, *KU Leuven, Leuven, Belgio*, Titolo: *Cohomological Invariants for stacks of algebraic curves*.

Attività organizzative

- 31/08/2020-
04/09/2020 **Motives and Moduli Spaces**, *conferenza (rimandata)*, *KTH/Stockholm University*, Co-organizzatore, con D. Rydh e D. Petersen.
<https://sites.google.com/view/motives-moduli-spaces/home>

Conferenze e Workshop

- 30/09-
04/10/19 **The Geometry of Algebraic Varieties**, *Centre International de Rencontres Mathématiques, Luminy, Francia*.
- 15-19/10/18 **Cohomology of Algebraic Varieties**, *Centre International de Rencontres Mathématiques, Luminy, Francia*.
- 14/04/2018 **Spring 2018 AMS meeting, Special session on Moduli Spaces**, *Portland State University, Portland, Oregon, USA*.
- 14-15/10/17 **WAGS Fall 2017**, *UCLA, Los Angeles, California, USA*.
- 11-13/09/17 **British Algebraic Geometry Meeting III**, *University of Cambridge, Cambridge, UK*.
- 21-25/08/17 **Lie Theory, Cohomology and Geometry in Wildrose Country**, *University of Alberta, Edmonton, Alberta, Canada*.
- 23-29/04/17 **Algebraic Groups MFO Workshop**, *MFO Oberwolfach, Oberwolfach, Germania*.
- 08-09/04/17 **W.A.G.S. Spring 2017**, *University of British Columbia, Vancouver, British Columbia, Canada*.
- 29-30/10/16 **ABC Algebra Workshop**, *University of Alberta, Edmonton, Alberta, Canada*.
- 15-16/10/16 **W.A.G.S. Fall 2016**, *Colorado State University, Fort Collins, Colorado, USA*.

- 25-28/05/16 **Giornate di Geometria Algebrica e Argomenti Correlati XIII**, *Università di Catania, Catania, Italia.*
- 08-10/04/16 **AGNES Spring 2016**, *Yale University, New Haven, Connecticut, USA.*
- 04-07/12/15 **CMS Winter meeting**, *Montreal, Quebec, Canada.*
- 13-18/09/15 **The Use of Linear Algebraic Groups in Geometry and Number Theory**, *Banff Centre, Banff, Alberta, Canada.*
- 01-05/06/15 **G.A.E.L. XXIII**, *KU Leuven, Leuven, Belgio.*
- 23-27/07/14 **GRIFGA-Lebesgue Summer school on derived categories**, *Université de Nantes, Nantes, Francia.*
- 25-27/04/14 **Agnes Spring Workshop**, *Simons Center for Mathematics and Physics, Stony Brook, Rhode Island, USA.*
- 16-20/12/13 **Fundamental Groups in Arithmetic and Algebraic Geometry**, *Centro Ennio de Giorgi, Pisa, Italia.*
- 11-21/06/13 **Developments in Moduli Theory**, *Kyoto University, Kyoto, Giappone.*
- 23-26/05/12 **Giornate di Geometria Algebrica e Argomenti Correlati XI**, *Centro Ennio de Giorgi, Pisa, Italia.*

CVRRICVLVM VITÆ

Nuno M. Romão

June 2020

1. Personal data and contacts

2. Education

- **1998–2002:** PhD in Mathematics at DAMTP, University of Cambridge, UK. Dissertation: “Classical and Quantum Aspects of Topological Solitons”. Supervisor: Professor Nicholas S. Manton, FRS.
- **1997/98:** Certificate of Advanced Study in Mathematics, DPMMS, University of Cambridge, UK (Class: Honours), also known as Part III of the Mathematical Tripos. Courses taken: Quantum Field Theory, Advanced Quantum Field Theory, Conformal Field Theory, Riemann Surfaces and Discrete Groups, Commutative Algebra, Algebraic Geometry. This degree is equivalent to a Cambridge MSt (Master of Advanced Study) in Mathematics.
- **Summer Semester 1996:** ERASMUS Student at the University of Hanover, Germany.
- **1992–97:** First degree (“Licenciatura”) in Engineering Physics at Instituto Superior Técnico (IST), Lisbon, Portugal (First Class – 19 out of 20 marks, top of year). Undergraduate Thesis (July 1997): “Renormalisation Group and Applications to Supersymmetric Grand Unification Models”.

3. Positions held

- **From 2018:** *Habilitand* (supervisor: Prof. Kai Cieliebak), Department of Mathematics, University of Augsburg, Germany.
- **01.10.2016–30.04.2017:** Scientific Assistant, Department of Mathematics (host: Prof. Kai Cieliebak), University of Augsburg, Germany.
- **04.01.2016–04.03.2016:** Research Visitor, Institut des Hautes Études Scientifiques (host: Prof. Vasily Pestun), University of Paris–Saclay, France.
- **01.10.2013–31.03.2015:** Scientific Assistant, Mathematical Institute (host: Prof. Victor Pidstrygach), University of Göttingen, Germany.
- **16.09.2013–16.10.2013:** Research Fellow, Lichtenberg–Kolleg, University of Göttingen, Germany.
- **01.01.2013–31.03.2013:** Visitor at the Hausdorff Research Institute for Mathematics (supported by the Leibniz Prize of Prof. Wolfgang Lück), University of Bonn, Germany.
- **03.09.2012–31.12.2013:** Leader of the group “Geometry of Gauged Vortices” at the Junior Hausdorff Trimester Program “Mathematical Physics”, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.

- **01.10.2011–31.12.2012:** Research Guest at the Max Planck Institute for Mathematics, Bonn, Germany.
- **01.01.2011–30.06.2011:** Postdoctoral Researcher at the Department of Algebra and Geometry (host: Prof. Ignasi Mundet i Riera), University of Barcelona, Spain.
- **01.08.2009–30.11.2010:** Marie Curie Fellow, Institute of Mathematics and Institute of Physics (joint appointment), Jagiellonian University, Cracow, Poland.
- **15.08.2007–31.07.2009:** Postdoctoral Researcher at the Center for the Topology and Quantization of Moduli Spaces (CTQM; host: Prof. Jørgen E. Andersen), Department of Mathematical Sciences, Aarhus University, Denmark.
- **15.08.2006–14.08.2007:** Visiting Scholar in Pure Mathematics (host: Prof. Richard B. Melrose), Department of Mathematics, Massachusetts Institute of Technology, Cambridge MA, USA.
- **15.04.2004–14.08.2006:** ARC Research Associate (position financed by a grant of Prof. Michael K. Murray), School of Mathematical Sciences, University of Adelaide, Australia.
- **01.10.2003–14.04.2004:** Postdoctoral Researcher at the Max Planck Institute of Mathematics (host: Prof. Matilde Marcolli), Bonn, Germany.
- **01.10.2002–30.09.2003:** Postdoctoral Researcher at the Max Planck Institute for Mathematics in the Sciences (host: Prof. Jürgen Jost), Leipzig, Germany.

4. Research interests

- Aspects of differential and algebraic geometry in mathematical physics: Kähler geometry and its generalisations, integrable systems, geometric quantisation, geometric phases, geometric analysis related to gauge theory, algebra and topology in QFTs.
- Topological solitons in gauge theories (in particular monopoles and vortices): structure and geometry of their moduli spaces, classical dynamics, statistical mechanics, BPS equations and supersymmetric extensions, semiclassical approaches to quantisation, dualities.

5. Publications

5.1. Refereed articles:

- “The geometry of the space of BPS vortex-antivortex pairs” (with J.M. Speight), to appear in *Commun. Math. Phys.*; [arXiv:1807.00712](#) (53 pages)
- “Kähler quantization of vortex moduli” (with D. Eriksson), *Lett. Math. Phys.* **110** (2020) 659–693
- “The Nahm–Schmid equations and hypersymplectic geometry” (with R. Bielawski and M. Röser), *Quart. J. Math.* **69** (2018) 1253–1286
- “A no-go theorem for nonabelian statistics in gauged linear sigma-models” (with I. Biswas), *Adv. Theor. Math. Phys.* **21** (2017) 901–920
- “On the curvature of vortex moduli spaces” (with M. Bökstedt), *Math. Z.* **277** (2014) 249–273
- “Moduli of vortices and Grassmann manifolds” (with I. Biswas), *Commun. Math. Phys.* **320** (2013) 1–20
- “Singularities of Abel–Jacobi maps and geometry of dissolving vortices”, *J. Singul.* **6** (2012) 146–157
- “Vortices and Jacobian varieties” (with N. S. Manton), *J. Geom. Phys.* **61** (2011) 1135–1155
- “Spectral curves and the mass of hyperbolic monopoles” (with P. Norbury), *Commun. Math. Phys.* **270** (2007) 295–333
- “Slow dynamics of \mathbb{CP}^1 lumps on a cylinder”, in: J.C. Mourão, J.P. Nunes, R. Picken, J.-C. Zambrini (Eds.): Prospects in Mathematical Physics (Lisbon 2003), *Contemporary Mathematics* **437**, American Mathematical Society, 2007 (pp. 209–221)

- “A combinatorial formula for homogeneous moments” (with M. G. Eastwood), *Math. Proc. Camb. Phil. Soc.* **142** (2007) 153–160
- “Gauged vortices in a background”, *J. Phys. A: Math. Gen.* **38** (2005) 9127–9144 [also at IoP Select]
- “Dynamics of \mathbb{CP}^1 lumps on a cylinder”, *J. Geom. Phys.* **54** (2005) 42–76
- “Slow Schrödinger dynamics of gauged vortices” (with J. M. Speight), *Nonlinearity* **17** (2004) 1337–1355
- “First-order Bogomol’nyi vortices on a sphere”, in: Proceedings of the Workshop on Integrable Theories, Solitons and Duality, IFT, São Paulo, 2002, *JHEP Proceedings* PREHEP-unesp2002/043
- “Quantum Chern–Simons vortices on a sphere”, *J. Math. Phys.* **42** (2001) 3445–3469
- “On the constraints defining BPS monopoles” (with C. J. Houghton and N. S. Manton), *Commun. Math. Phys.* **212** (2000) 219–243

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Citations on MathSciNet: 70

5.2. Invited book reviews:

- “*Solitons, Instantons and Twistors* by Maciej Dunajski”, to appear in Bull. London Math. Soc.

5.3. Thesis:

- “Classical and Quantum Aspects of Topological Solitons”, PhD Thesis, University of Cambridge, 2002

5.4. Submitted preprints:

- “Pairs of pants, Pochhammer curves and L^2 -invariants” (with M. Bökstedt); [arXiv:1410.2429](#)
- “Divisor braids” (with M. Bökstedt); [arXiv:1605.07921](#)

5.5. Current preprints (in preparation):

- “ L^2 -Betti numbers and particle counting in a gauged nonlinear sigma-model” (with C. Wegner)
- “Moduli spaces of vortices in toric fibre bundles” (with M. Bökstedt)
- “ L^2 -invariants and supersymmetric quantum mechanics on vortex moduli spaces” (with M. Bökstedt)
- “Asymptotics of nonlinear vortex metrics” (with Á. Nagy)

6. Talks presented

6.1. Talks at conferences and workshops (* invited):

- **22.08.2019:** “Pair-of-pants decompositions and Pochhammer states”, at the conference “New Trends in Geometry and Mathematical Physics”, CSF, Ascona, Switzerland.
- **31.07.2018*:** “Vortices with toric targets and divisor braids”, at the QGM Nielsen Retreat 2018, Sandbjerg Estate, Denmark.
- **31.07.2018*:** “Statistical physics of 2d gas mixtures from symplectic volumes of vortex moduli”, at the Statistical Physics division of the programme “Integrable Systems in Mathematics, Condensed Matter and Statistical Physics”, ICTS, Bangalore, India.
- **24.07.2018*:** “The Nahm–Schmid equations: integrability and hypersymplectic geometry”, at the Mathematical Physics division of the programme “Integrable Systems in Mathematics, Condensed Matter and Statistical Physics”, ICTS, Bangalore, India.
- **26.06.2018*:** “Solitons in gauged sigma-models and noncommutative geometry” at the workshop “Solitons (non)Integrability Geometry VII”, Jagiellonian University, Cracow, Poland.

- **12.04.2018***: “ L^2 geometry of symplectic vortices” at the conference “Geometric Aspects of Momentum Maps and Integrability”, CSF, Ascona, Switzerland.
- **16.11.2017***: “Holonomies of generalised configuration spaces”, at the International Conference on Symmetry and Geometric Structures, IMPAN, Warsaw, Poland.
- **12.10.2017***: “Asymptotic geometry of nonlinear vortex moduli”, at the Master Class on Geometric Analysis on Noncompact Manifolds, University of Copenhagen, Denmark.
- **06.09.2017***: “Moduli of symplectic vortices: topology and asymptotic geometry”, at the Waterloo Geometry Symposium, University of Waterloo, Canada.
- **23.06.2017***: “Asymptotic geometry and topology of BPS vortex-antivortex moduli spaces”, at the London Summer School and Workshop “The Sen Conjecture and Beyond”, UCL, UK.
- **25.04.2017***: “Geometry of BPS vortex-antivortex moduli spaces”, at the Topical Workshop on Geometry, Gravity and Supersymmetry, MITP, University of Mainz, Germany.
- **18.02.2017**: “Moduli spaces of vortices”, at the Meeting on Symplectic Geometry and Topology, Humboldt University of Berlin, Germany.
- **01.11.2016***: “Kähler quantisation of vortex moduli spaces”, at the QGM Nielsen Retreat 2016, Sandbjerg Gods, Denmark.
- **26.10.2014***: “Quantum vortices on closed surfaces and L^2 -invariants”, at the QGM Nielsen Retreat 2014, Sandbjerg Gods, Denmark.
- **10.05.2013***: “Spectral curves of hyperbolic monopoles”, at Integrability and Hyperbolic Monopoles, ICMS, University of Edinburgh, UK.
- **06.03.2013***: “Supersymmetric quantum mechanics on vortex moduli spaces”, at the Yorkshire and Durham Geometry Day, University of Leeds, UK.
- **11.07.2011***: “Complex geometry of dissolving vortices”, at the Workshop “Gauge Theory and Complex Geometry”, University of Leeds, UK.
- **19.05.2011**: “Singularities of Abel–Jacobi maps and geometry of dissolving vortices”, at the IMPAN Workshop on Singularities in Geometry and Applications, Będlewo, Poland.
- **13.10.2010***: “Vortices and Jacobian varieties”, at the CTQM/QGM Nielsen Retreat 2010, Sandbjerg Estate, Denmark.
- **15.05.2010***: “Moduli spaces, moment maps and geometric structures in holomorphic vector bundles”, at the 2010 Stanisław Łojasiewicz Lecture Preparatory Workshop, Jagiellonian University, Cracow, Poland.
- **12.10.2009***: “Vortex moduli spaces and Grassmann manifolds”, at the CTQM Nielsen Retreat 2009, Sandbjerg Estate, Denmark.
- **04.10.2008***, **10.10.2008***, **19.03.2009***: “Gauged vortices and localisation”, at the CTQM Nielsen Retreat 2008, Sandbjerg Estate, Denmark; at the Differential Geometry Day, University of Southern Denmark, Odense, Denmark; and at the HRI-ICM, Harish-Chandra Research Institute, Allahabad, India.
- **21.10.2007***, **07.01.2008**: “Spectral data of singular monopoles”, at the CTQM Nielsen Retreat 2007, Sandbjerg Estate, Denmark; and at the 1st Odense Winter School on Geometry and Theoretical Physics, University of Southern Denmark, Odense, Denmark.
- **18.05.2008**: “Gauged vortices and symplectic geometry”, at the workshop “Quantum Gravity: an assessment”, Søminestationen Dragerup, Holbæk, Denmark.
- **23.07.2006**, **27.08.2007***: “Spectral curves and the mass of hyperbolic monopoles”, at the Workshop on Mathematics of String Theory 2006, ANU, Canberra, Australia; and at the Workshop on Non-linear Integral Transforms: Fourier-Mukai and Nahm, CRM, Montreal, Canada.
- **29.08.2005***: “Partition functions for vortex interactions”, at the Workshop on Mathematics of String Theory, University of Melbourne, Australia.
- **01.12.2004**: “Statistical mechanics of gauged vortices”, at the Workshop “Mathematical Physics and Lie Theory”, Coolangatta, Australia.

- **26.07.2003***, **20.01.2004**, **28.09.2004***: “Dynamics of \mathbb{CP}^1 lumps on a cylinder”, at the Young Researchers Symposium of the XIV International Congress on Mathematical Physics, IST, Lisbon, Portugal; at the 24th Winter School “Geometry and Physics”, Srní, Czech Republic; and at the 48th Annual Meeting of the Australian Mathematical Society, RMIT, Melbourne, Australia.
- **04.07.2002**: “First-order Bogomol’nyi vortices on a sphere”, at the Workshop on Integrable Theories, Solitons and Duality, IFT, São Paulo, Brazil.
- **23.04.2001***, **17.09.2001***: “Quantum vortices on a sphere”, at the “Yorkshire Differential Geometry Day”, University of Leeds, UK; and at the Workshop “Solitonic Objects in Field and String Theories”, KIAS, Seoul, South Korea.

6.2. Research seminars (* invited):

- **08.05.2020*** (date TBC): “Kähler quantisation of vortex moduli”, at the Seminari de Geometria Algebraica, University of Barcelona, Spain.
- **29.01.2020***: “Pochhammer states on Riemann surfaces”, at the Geometry Seminar, University of Leeds, UK.
- **28.01.2020***: “Pochhammer states on Riemann surfaces”, at the Geometry and Mathematical Physics Seminar, University of York, UK.
- **24.04.2019***: “Bloch forms and Pochhammer states”, at QGM, Aarhus University, Denmark.
- **07.11.2018***: “Hyperkähler metrics on moduli of Higgs bundles”, at the working group “Complex Contact Manifolds”, VAT Programme, IMPAN, Poland.
- **30.10.2018***: “Quillen metrics and geometric quantization of vortex moduli”, at the Seminar semi-klassische Analysis und Darstellungstheorie, University of Cologne, Germany.
- **05.10.2018***: “Kähler quantization of vortex moduli”, at the Research Seminar of the VAT Programme, IMPAN, Poland.
- **23.08.2018***: “The geometry of the space of BPS vortex-antivortex pairs”, at QGM, Aarhus University, Denmark.
- **23.05.2018***: “The geometry of the space of BPS vortex-antivortex pairs”, at the Geometry Seminar, University of Leeds, UK.
- **22.03.2018***: “Topology and asymptotic geometry of vortex moduli”, at the Manchester Geometry, Topology and Mathematical Physics Seminar, University of Manchester, UK.
- **16.01.2018***: “ L^2 geometry of symplectic vortices”, at the Augsburg Mathematical Colloquium, University of Augsburg, Germany.
- **07.12.2017***: “Asymptotic L^2 geometry of nonlinear vortex moduli”, at the Oberseminar Geometrie, University of Kiel, Germany.
- **15.09.2017***: “Vortex moduli and the physics of gauged sigma-models”, at the Mathematical Colloquium, University of Iceland, Reykjavik, Iceland.
- **11.09.2017***: “Geometric quantization of vortex moduli”, at the Symplectic Geometry Seminar, University of Toronto, Canada.
- **02.11.2016***: “Nonabelian braiding by topological solitons”, at the Quantum Lunch, QMATH, University of Copenhagen, Denmark.
- **28.06.2016***: “Divisor braids”, at the Augsburg Mathematical Colloquium, University of Augsburg, Germany.
- **27.06.2016***: “Moduli of vortices in toric fibre bundles”, at the “Oberseminar Differentialgeometrie”, University of Augsburg, Germany.
- **08.07.2015***: “Asymptotic geometry in moduli of nonlinear Abelian vortices”, at the Informal Geometric Analysis Seminar, Max Planck Institute for Mathematics, Bonn, Germany.
- **23.04.2015***: “Geometry and topology of toric gauged sigma-models”, Oberseminar Differentialgeometrie, Leibniz University of Hanover, Germany.

- **08.04.2015***, **26.01.2015**, **02.02.2015**: “Divisor braids and gauge theory”, at the Mathematical Physics Seminar, DAMTP, University of Cambridge, UK; and (in two parts) at the Gauge Theory Seminar, University of Göttingen, Germany.
- **17.11.2014**: “Pairs of pants, Pochhammer curves and quantum vortices”, at the Gauge Theory Seminar, University of Göttingen, Germany.
- **07.07.2014**, **20.08.2014***: “Quantum vortices on closed surfaces and L^2 -invariants”, at the Gauge Theory Seminar, University of Göttingen, Germany; and at the Geometry and Topology Seminar, National University of Singapore, Singapore.
- **13.01.2014**: “Supersymmetric quantum mechanics on moduli spaces”, at the Gauge Theory Seminar, University of Göttingen, Germany.
- **28.10.2013**: “Vortices and their moduli spaces”, at the Gauge Theory Seminar, University of Göttingen, Germany.
- **19.06.2013***, **15.01.2014***, **11.04.2014***: “ L^2 -invariants of vortex moduli”, at the “Oberseminar Algebra und Geometrie”, University of Leipzig, Germany; at the “Oberseminar Geometrie und Topologie”, University of Bielefeld, Germany; and at the “Seminari de Geometria Algebraica”, University of Barcelona, Spain.
- **07.05.2013***, **09.05.2013***, **21.05.2013***, **10.06.2013***, **20.12.2013***: “Supersymmetric quantum mechanics on vortex moduli spaces”, at the Mathematical Physics Seminar, DAMTP, University of Cambridge, UK; at the Geometry Seminar, University of Edinburgh, UK; at the Seminar on Algebra, Geometry and Physics, Max Planck Institute for Mathematics, Bonn, Germany; at the String Theory and Beyond the Standard Model Seminar, Heidelberg University, Germany; and at the “Geometria em Lisboa” Seminar, Instituto Superior Técnico, Lisbon, Portugal.
- **26.11.2012***: “Some geometry of the vortex equations”, at the Trimester Seminar, HIM, University of Bonn, Germany.
- **22.11.2012***: “Geometry of vortex moduli spaces”, at the Geometry Seminar, Ecole Polytechnique Fédérale de Lausanne, Switzerland.
- **04.09.2012**: “The vortex equations”, at the Vortex Seminar, HIM, University of Bonn, Germany.
- **03.05.2012***: “Vortices and Jacobian varieties”, at the “Geometria em Lisboa” Seminar, Instituto Superior Técnico, Lisbon, Portugal.
- **08.12.2011***: “Geometry of gauged vortices”, at the Oberseminar, Max Planck Institute for Mathematics, Bonn, Germany.
- **01.12.2010***, **08.03.2011***, **27.05.2011***: “Moduli of vortices and Grassmann manifolds”, at the “Seminari de Geometria Algebraica”, University of Barcelona, Spain; at the Mathematical Physics Seminar, DAMTP, University of Cambridge, UK; and at the Seminario de Geometría y Física, Complutense University of Madrid.
- **29.09.2010***: “Geometry of vortex moduli spaces”, at the University of Cologne, Germany.
- **09.04.2010***: “Vortex moduli spaces and Grassmann manifolds”, at the Geometry Seminar of the Alfréd Rényi Institute of Mathematics, Budapest, Hungary.
- **26.11.2009**, **30.11.2009**: “Gauged vortices and localisation I and II”, at the Mathematical Physics Seminar, Jagiellonian University, Cracow, Poland.
- **22.05.2009***, **27.11.2009***: “Gauged vortices and localisation”, at the Jagiellonian University, Cracow, Poland; and at the Department of Physics of the University of Warsaw, Poland.
- **18.04.2008***, **08.05.2008***: “Geometry of gauged vortices”, at the Leibniz University of Hanover, Germany; and at the University of Luxembourg, Luxembourg.
- **01.10.2008***: “Spectral data of singular monopoles”, at the String Theory Seminar, IST, Lisbon, Portugal.
- **12.12.2006**: “Gauged vortices and symplectic geometry”, at the Symplectic Working Group Seminar, MIT, Cambridge MA, USA.

- **03.03.2006, 09.01.2007*, 25.09.2007*, 10.12.2007*, 11.03.2008*, 03.07.2008***: “Spectral curves and the mass of hyperbolic monopoles”, at the Differential Geometry Seminar, University of Adelaide, Australia; at the “Geometria em Lisboa” Seminar, IST, Lisbon, Portugal; at the Topology Seminar, Aarhus University, Denmark; at the Topology Seminar, University of Copenhagen, Denmark; at the Mathematical Physics Seminar, DAMTP, University of Cambridge, UK; and at the “Oberseminar Geometrie und Topologie”, University of Bielefeld, Germany.
- **02.05.2005***: “Spectral curves and the mass of hyperbolic 2-monopoles”, at the Geometry/Topology Seminar, University of Melbourne, Australia.
- **09.03.2005*, 29.06.2005*, 09.07.2005**: “Gauged vortices in a background”, at the Differential Geometry Seminar, University of Adelaide, Australia; at the TQFT Club, IST, Lisbon, Portugal; and at the Gauge Theory Seminar, Max Planck Institute of Mathematics, Bonn, Germany.
- **05.12.2003*, 07.05.2004*, 14.07.2004***: “Schrödinger dynamics of gauged vortices: classical and quantum mechanics”, at the Gauge Theory Seminar, Max Planck Institute of Mathematics, Bonn, Germany; at the Differential Geometry Seminar, University of Adelaide, Australia; and at the University of Melbourne, Australia.
- **09.03.2004*, 05.04.2004***: “Dynamics of \mathbb{CP}^1 lumps on a cylinder”, at the Solitons and Integrability Seminar, DAMTP, University of Cambridge, UK; and at the Gauge Theory Seminar, Max Planck Institute of Mathematics, Bonn, Germany.
- **06.11.2001**: “Moment maps on vortex moduli spaces”, at the Mathematical Physics Seminar, DAMTP, University of Cambridge, UK.
- **16.10.2000*, 20.12.2001***: “Quantum vortices on a sphere”, at the Institute of Mathematics of the University of Kent at Canterbury, UK; and at the TQFT Club, Department of Mathematics, IST, Lisbon, Portugal.
- **16.12.1999***: “Constraints on monopole spectral curves”, at the TQFT Club, Department of Mathematics, IST, Lisbon, Portugal.
- **01.11.1999***: “Monopoles and their moduli spaces”, at the HEP Student Seminar, DAMTP, University of Cambridge, UK.
- **28.01.1999, 04.06.1999, 18.05.2000, 24.10.2000**: presentations at the Informal Soliton Seminar, DAMTP, University of Cambridge, UK.

6.3. Mini-courses at research level (* invited):

- **February 2021* (upcoming)**: “Quantization of Vortices”, four lectures at the Programme “Vortex Moduli”, ICTS, Bangalore, India.
- **December 2013**: “Vortices in toric fibre bundles”, two lectures at the Gauge Theory Seminar, University of Göttingen, Germany.
- **February 2012***: “Vortex equations and their geometry”, six lectures at the Seminar “Topological Methods in Nonlinear Analysis”, Gdańsk University of Technology, Poland.
- **February/March 2011***: “ L^2 -geometry of gauged vortices”, two lectures for the “Grup de Recerca en Geometria i Topologia Algebraica” at the Department of Algebra and Geometry, University of Barcelona, Spain.
- **March 2000**: “Ingredients for Geometric Quantisation”, three lectures at the Student Discussion Seminar, DAMTP, University of Cambridge, UK.

7. Grants obtained

- **September 2019**: Grant from the International Centre for Theoretical Science (ICTS), Bangalore, India, to support a programme “Vortex Moduli” to be held at ICTS in February 2021.
- **March 2019**: Grant from the Simons Center for Geometry and Physics (SCGP), University of Stony Brook, USA, to support the workshop “Novel Vistas on Vortices” to be held at the SCGP in November 2019.

- **Fall 2013:** Grant from the Simons Center for Geometry and Physics (SCGP), University of Stony Brook, USA, to support the workshop “Gauged Sigma-Models in Two Dimensions” held at the SCGP in November 2014.
- **September 2013:** Short-Term Fellowship, Lichtenberg-Kolleg, University of Göttingen, Germany.
- **January 2013 – March 2013:** Supporting grant from the Leibniz Prize award of Professor Wolfgang Lück, University of Bonn, Germany.
- **September 2012 – December 2012:** “Geometry of Gauged Vortices”, Junior Hausdorff Research Trimester Program, Hausdorff Research Institute for Mathematics, University of Bonn, Germany. (Financial support to lead a group of ten researchers focusing on the mathematics of the vortex equations, and to host several activities such as a workshop and a weekly research seminar.)
- **May 2012:** “Quantisation of dissolving vortices”, short-visit grant of the European Science Foundation network “Interactions of Low-Dimensional Topology and Geometry with Mathematical Physics” (ITGP), supporting a research stay at Instituto Superior Técnico, Lisbon, Portugal (host: Prof. José Mourão).
- **October 2011 – September 2012:** Gast-Stipendium, Max Planck Institute for Mathematics, Bonn, Germany.
- **January 2011 – June 2011:** Postdoctoral Fellowship at “Grup de Recerca en Geometria i Topologia Algebraica”, funded by the Generalitat de Catalunya, Spain.
- **August 2009 – November 2010:** Marie Curie Fellowship of the European Commission, supporting the ToK action MTKD-CT-2006-042360.
- **August 2006 – August 2007:** Postdoctoral Scholarship BPD/14544/2003, FCT, Portugal.
- **October 2002 – April 2004:** Gast-Stipendium, Max-Planck-Gesellschaft, Germany.
- **1998–2002:** Scholarship BD/15939/98, PRAXIS XXI Programme, FCT, Portugal.
- **1997/98:** Scholarship BM/10742/97, PRAXIS XXI Programme, FCT, Portugal.
- **1996/97:** Scholarship “Introdução à Investigação” of the High Energy Theory Group, Lisbon, Portugal.
- **Summer Semester 1996:** Studentship PIC B-3029/13 of the ERASMUS Programme.

8. Awards and prizes

- **2005:** My article “Gauged Vortices in a Background” was highlighted in *IoP Select* as one of the best among those published in the journals issued by the Institute of Physics, UK
- **2000/01:** Munro Scholarship (award for excellence in teaching), Queens’ College, Cambridge, UK.
- **16.06.1999:** “1997 IST Prize” (for top grades among all students in same matriculation year), Instituto Superior Técnico, Lisbon, Portugal.
- **21.11.1998:** “1997 National Engineering Prize” in Engineering Physics, Society of Engineers, Portugal.
- **July 1992:** Laureate of the “Concours Européen de Langue Française”, Alliance Française de Paris, France.

9. Conferences and schools

- **15.02.21–28.02.21 (upcoming):** Programme “Vortex Moduli”, ICTS, Bangalore, India.
- **11.11.19–15.11.19:** Workshop “Novel Vistas on Vortices”, Simons Center for Geometry and Physics, Stony Brook University NY, USA.
- **18.08.19–23.08.19:** Conference “New Trends in Geometry and Mathematical Physics”, CSF, Ascona, Switzerland.
- **29.07.19–02.08.19:** Conference on “Integrability, Geometry and Moduli”, Max Planck Institute for Mathematics, Bonn, Germany.

- **22.07.19–26.08.19:** Workshop “Geometric and Analytic Aspects of Moduli Spaces”, Leibniz University of Hanover, Germany.
- **15.07.19–19.07.19:** Conference “Quantization in Symplectic Geometry”, University of Cologne, Germany.
- **24.06.19–28.06.19:** SwissMap Workshop “Mathematical Physics meets Quantum Information”, Leysin, Switzerland.
- **06.01.19–11.01.19:** Winter School in Mathematical Physics 2019, Les Diablerets, Switzerland.
- **23.10.18–26.10.18:** QGM Nielsen Retreat 2018, Sandbjerg Estate, Denmark.
- **08.10.18–12.10.18:** International Workshop on Geometric Quantization and Applications, CIRM, Luminy, France.
- **23.09.18–07.11.18:** Special Semester at the Banach Center: “Varieties: Arithmetic and Transformations”, IMPAN, Warsaw, Poland.
- **23.09.18–29.09.18:** School and Workshop: “Varieties and Group Actions”, IMPAN, Warsaw, Poland.
- **18.07–07.08.18:** Programme “Integrable Systems in Mathematics, Condensed Matter and Statistical Physics”, ICTS, Bangalore, India.
- **16–27.08.18:** Meeting “Quantum Fields, Geometry and Representation Theory”, ICTS, Bangalore, India.
- **25.06.18–29.06.18:** Workshop: “Solitons (non)Integrability Geometry VII”, Jagiellonian University, Cracow, Poland.
- **04.06.18–08.06.18:** Conference: “Quantization and Moduli Spaces”, University of Luxembourg, Luxembourg.
- **30.04.18–13.05.18:** Workshop “Supersymmetric Quantum Field Theories in the Non-perturbative Regime”, Galileo Galilei Institute for Theoretical Physics, Arcetri/Florence, Italy.
- **08.04.18–13.04.18:** Conference “Geometric Aspects of Momentum Maps and Integrability”, CSF, Ascona, Switzerland.
- **05.02.18–09.02.18:** Research School: “Winter Braids VIII”, CIRM, Luminy, France.
- **07.01.18–12.01.18:** Winter School in Mathematical Physics 2018, Les Diablerets, Switzerland.
- **17.11.17–21.11.17:** QGM Nielsen Retreat 2017, Sandbjerg Estate, Denmark.
- **13.11.17–17.11.17:** International Conference on Symmetry and Geometric Structures, IMPAN, Warsaw, Poland.
- **09–13.10.17:** Master Class on Geometric Analysis on Noncompact Manifolds, University of Copenhagen, Denmark.
- **08.09.17:** Geometry Symposium, University of Waterloo, Canada.
- **27.08.17–01.09.17:** Workshop: “The Analysis of Gauge-Theoretic Moduli Spaces”, BIRS, Banff, Canada.
- **21.08.17–25.09.17:** Conference (on Jacques Hurtubise’s 60th birthday): “Gauge Theories, Moduli Spaces and Integrable Systems”, CRM, Montreal, Canada.
- **25.07.17–04.08.17:** Summer School: “Exact Methods in Low Dimensional Statistical Physics”, IESC, Cargèse (Corsica), France.
- **19.06.17–23.06.17:** London Summer School and Workshop: “The Sen Conjecture and Beyond”, University College London, UK.
- **15.05.17–19.05.17:** Master Class on Exotic Phases of Matter, University of Copenhagen, Denmark.
- **24.04.17–28.04.17:** Topical Workshop on Geometry, Gravity and Supersymmetry, MITP, University of Mainz, Germany.
- **06.03.17–09.03.17:** Conference “Irregular Connections, Character Varieties and Physics”, University of Paris VII, France.

- **27.02.17–02.03.17:** Workshop on Quantum Fields, Knots and Integrable Systems, ICMS, University of Edinburgh, UK.
- **17.02.17–19.02.17:** Meeting on Symplectic Geometry and Topology, Humboldt University of Berlin, Germany.
- **09.01.17–13.01.17:** Winter School in Mathematical Physics 2017, Les Diablerets, Switzerland.
- **29.10.16–01.11.16:** QGM Nielsen Retreat 2016, Sandbjerg Estate, Denmark.
- **05.09.16–07.09.16:** Conference “Hitchin 70: Differential Geometry and Quantization”, QGM, Aarhus University, Denmark.
- **04.07.16–08.07.16:** Bethe Forum on “Mirror Symmetry”, University of Bonn, Germany.
- **17.03.16–25.05.16:** “Noncommutative Geometry and Operator Algebras” Spring Institute 2016, HIM, University of Bonn, Germany.
- **18.03.16–22.03.16:** Closing Conference for the Programme on Higher Structures in Geometry and Physics, Max Planck Institute for Mathematics, Bonn, Germany.
- **13.11.15–17.11.15:** QGM Nielsen Retreat 2015, Sandbjerg Estate, Denmark.
- **09.11.15–13.11.15:** Master Class: “Perturbative Quantization of Gauge Theories on Manifolds with Boundary” by Nikolai Reshetikhin, QGM, Aarhus University, Denmark.
- **21.10.15–23.10.15:** Panorama of Mathematics, Hausdorff Center for Mathematics, Bonn, Germany.
- **12.10.15–16.10.15:** Higher Structures in Geometry and Physics 2015, Max Planck Institute for Mathematics, Bonn, Germany.
- **28.09.15–08.10.15:** Introductory School on Moduli Spaces, Max Planck Institute for Mathematics, Bonn, Germany.
- **17.08.15–21.08.15:** Conference on Topology and Geometry, Hausdorff Center for Mathematics, University of Bonn, Germany.
- **27.07.15–31.07.15:** Workshop “Metric and Analytic Aspects of Moduli Spaces”, Isaac Newton Institute for Mathematical Sciences, University of Cambridge, UK.
- **26.06.15–03.07.15:** Mathematische Arbeitstagung “Counting problems on moduli spaces”, Max Planck Institute for Mathematics, Bonn, Germany.
- **15.06.15–19.06.15:** Workshop on “Homotopy theory, manifolds, and field theories”, Max Planck Institute for Mathematics, Bonn, Germany.
- **01.06.15–19.06.15:** Felix Klein Lectures “Elliptic cohomology and elliptic curves” by Charles Rezk, Hausdorff Center for Mathematics, University of Bonn, Germany.
- **04.05.15–08.05.15:** Introductory School for HTP “Homotopy theory, manifolds, and field theories”, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **30.03.15–02.04.15:** The 4th Joint British Mathematical Colloquium & British Applied Mathematics Colloquium, University of Cambridge, UK.
- **23.03.15–27.03.15:** Spring School “Characters of Representations and Modular Forms”, Max Planck Institute for Mathematics, Bonn, Germany.
- **11.01.15–16.01.15:** Winter School in Mathematical Physics 2015, Les Diablerets, Switzerland.
- **03.11.14–07.11.14:** Workshop “Gauged Sigma Models in Two Dimensions”, Simons Center for Geometry and Physics, Stony Brook University NY, USA.
- **24.10.14–28.10.14:** QGM Nielsen Retreat 2014, Sandbjerg Estate, Denmark.
- **06.10.14–10.10.14:** Masterclass on “TQFTs, quantum groups and 3-manifold invariants”, Department of Mathematical Sciences, University of Copenhagen, Denmark.
- **08.09.14–12.09.14:** Summer School “Modern Topics in Gromov–Witten Theory”, Leibniz University of Hanover, Germany.
- **04.08.14–08.08.14:** Conference “The Geometry, Topology and Physics of Moduli Spaces of Higgs Bundles”, IMS, National University of Singapore, Singapore.

- **30.06.14–04.07.14:** Summer School and Workshop “Differential Forms on Singular Complex Spaces”, Hausdorff Center for Mathematics, Bonn, Germany.
- **10.06.14–13.06.14:** Conference on Arithmetic Algebraic Geometry on the occasion of Gerd Faltings’ 60th birthday, Max Planck Institute for Mathematics, Bonn, Germany.
- **19.05.14–23.05.14:** IV International School on Geometry and Physics “The Geometry and Physics of Moduli Spaces”, Miraflores de la Sierra, Spain.
- **22.04.14–25.04.14:** SMS Spring Conference on “Quantization of Moduli Spaces”, University of Geneva, Switzerland.
- **17.03.14–19.03.14:** Workshop “Brill–Noether methods in the study of hyperkähler manifolds”, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **13.02.14–14.02.14:** Workshop “Higher Geometric Structures Along the Lower Rhine IV”, Max Planck Institute for Mathematics, Bonn, Germany.
- **19.08.13–22.08.13:** Conference “Topological recursion and quantum algebraic geometry”, QGM, Aarhus, Denmark.
- **17.08.13:** Lecture Series “Higgs bundles” by Ó. García-Prada, QGM, Aarhus, Denmark.
- **22.07.13–26.07.13:** Conference in Honor of Alan Weinstein, Centre Interfacultaire Bernoulli, EPFL, Lausanne, Switzerland.
- **01.07.13–05.07.13:** Conference on “Interaction between low dimensional topology and mapping class groups”, Max Planck Institute for Mathematics, Bonn, Germany.
- **03.06.13–07.06.13:** Workshop on “Geometry and topology of smooth 4-manifolds”, Max Planck Institute for Mathematics, Bonn, Germany.
- **22.05.13–28.05.05.13:** Mathematische Arbeitstagung, Max Planck Institute for Mathematics, Bonn, Germany.
- **10.05.13:** Integrability and Hyperbolic Monopoles, ICMS, University of Edinburgh, UK.
- **06.03.13:** Yorkshire and Leeds Geometry Day, University of Leeds, UK.
- **28.01.13–01.02.13:** Conference “Topological recursion and quantum algebraic geometry”, QGM, Aarhus, Denmark.
- **21.01.13–25.01.13:** Master Class “Recursion from matrix models to quantum algebraic geometry” by B. Eynard and N. Orantin, QGM, Aarhus, Denmark.
- **27.11.12–30.11.12:** Workshop “Geometry of the Vortex Equations”, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **12.11.12–14.11.12:** Workshop “Algebra, Physics and Geometry of BPS States”, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **24.09.12–28.09.12:** Workshop “Geometry and Physics of Moduli Spaces”, Heidelberg University, Germany.
- **20.09.12–21.09.12:** Conference “Topological Solitons”, DAMTP, University of Cambridge, UK.
- **23.07.12–03.08.12:** School and Conference “Poisson 2012: Poisson Geometry in Mathematics and Physics”, University of Utrecht, The Netherlands.
- **13.07.12:** Tropical Geometry in Europe, Max Planck Institute for Mathematics, Bonn, Germany.
- **16.04.12–20.04.12:** Workshop on Integrability in Topological Field Theory, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **26.03.12–30.03.12:** 3rd International School on Geometry and Physics: “Geometry and Quantization of Moduli Spaces”, CRM, Barcelona, Spain.
- **29.01.12–03.02.12:** Winter School in Mathematical Physics 2012 “New Mathematical Aspects of Quantum Field Theory”, Les Houches, France.
- **23.01.12–25.01.12:** Workshop on Geometric PDEs and Integrability, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.

- **17.01.12–20.01.12:** Master Class “Vortex Equations and Hamiltonian GW-Invariants” by I. Mundet i Riera, QGM, Aarhus, Denmark.
- **12.01.12–13.01.12:** Workshop “Higher Geometric Structures Along the Lower Rhine”, Max Planck Institute for Mathematics, Bonn, Germany.
- **09.01.12–13.01.12:** Workshop “Integrability – Modern Variations”, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **30.11.10–02.12.11:** Workshop on Hyperkähler Geometry, Hausdorff Research Institute for Mathematics, University of Bonn, Germany.
- **10.10.11–13.10.11:** QGM Nielsen Retreat 2011, Sandbjerg Estate, Denmark.
- **20.08.11–26.08.11:** Workshop on Symplectic Field Theory V, University of Hamburg, Germany.
- **08.08.11–12.08.11:** Aarhus Gauge Theory Workshop, QGM, Aarhus, Denmark.
- **01.08.11–05.08.11:** Master Class “Instantons, Knots and Khovanov” by T. Mrówka, QGM, Aarhus, Denmark.
- **04.07.11–23.07.11:** Workshop “Gauge Theory and Complex Geometry”, University of Leeds, UK.
- **01.06.11–03.06.11:** Jornadas RSME2011 “Los Problemas del Milenio”, University of Barcelona, Spain.
- **15.05.11–21.05.11:** IMPAN Workshop on Singularities in Geometry and Applications, Będlewo, Poland.
- **14.03.11–18.03.11:** Workshop “Representation of surface groups and Higgs bundles”, University of Oxford, UK.
- **13.10.10–17.10.10:** Conference “Quantization of singular spaces”, QGM, Aarhus, Denmark.
- **08.10.10–10.10.10:** School “Quantization of singular spaces”, QGM, Aarhus, Denmark.
- **10.10.10–14.10.10:** CTQM/QGM Nielsen Retreat 2010, Sandbjerg Estate, Denmark.
- **16.08.10–20.08.10:** Master Class “Wall-crossing” by M. Kontsevich, QGM, Aarhus, Denmark.
- **20.07.10–30.07.10:** School and Conference “Poisson 2010: Poisson Geometry in Mathematics and Physics”, IMPA, Rio de Janeiro, Brazil.
- **14.06.10–18.06.10:** Master Class: “Cluster algebras” by S. Fomin, CTQM, Aarhus, Denmark.
- **17.05.10–18.05.10:** Conference “Road to Reality with Roger Penrose”, Stefan Banach International Mathematical Center, Warsaw, Poland.
- **15.05.10:** 2010 Stanisław Łojasiewicz Lecture Preparatory Workshop, Jagiellonian University, Cracow, Poland.
- **11.10.09–15.10.09:** CTQM Nielsen Retreat 2009, Sandbjerg Estate, Denmark.
- **21.08.09–28.08.09:** Summer School and Conference “Moduli”, Humboldt University, Berlin, Germany.
- **06.07.09–10.07.09:** Workshop on Equivariant Gromov–Witten Theory and Symplectic Vortices, CIRM, Luminy, France.
- **30.03.09–02.04.09:** Workshop “Variational Problems in Differential Geometry”, University of Leeds, UK.
- **16.03.09–20.03.09:** HRI-ICM, Harish-Chandra Research Institute, Allahabad, India.
- **10.10.08:** Differential Geometry Day, University of Southern Denmark, Odense, Denmark.
- **03.10.08–06.10.08:** CTQM Nielsen Retreat 2008, Sandbjerg Estate, Denmark.
- **01.09.08–05.09.08:** Conference “Representations of Surface Groups”, CIRM, Luminy, France.
- **25.08.08–29.08.08:** Master Class: “Planar Algebra” by V. Jones, CTQM, Aarhus, Denmark.
- **07.07.08–11.07.08:** Workshop “The Geometric Langlands Program”, Lorentz Center, Leiden, The Netherlands.
- **17.06.08–27.06.08:** Master Class: “Ricci Flow and Geometrization of Three-Manifolds” by B. Chen and X. Zhu, CTQM, Aarhus, Denmark.

- **12.05.08–16.05.08:** Summer School “New Paths Towards Quantum Gravity”, Søminenstationen Dragerup, Holbæk, Denmark.
- **25.03.08–04.04.08:** Workshop: “Finite-Type Invariants, Fat Graphs and Torelli–Johnson–Morita Theory”, CTQM, Aarhus, Denmark.
- **17.03.08–21.03.08:** Master Class: “The Torelli Group” by A. Putman, CTQM, Aarhus, Denmark.
- **25.02.08–29.02.08:** International School “Moduli Spaces in Geometry, Topology and Physics”, CIEM, Castro Urdiales, Spain.
- **06.01.08–13.01.08:** 1st Odense Winter School on Geometry and Theoretical Physics, University of Southern Denmark, Odense, Denmark.
- **17.10.07–21.10.07:** CTQM Nielsen Retreat 2007, Sandbjerg Estate, Denmark.
- **15.10.07–26.10.07:** Master Class: “Integral TQFT” by G. Masbaum, CTQM, Aarhus, Denmark.
- **27.08.07–31.08.07:** Workshop on non-linear integral transforms: Fourier–Mukai and Nahm, CRM, Montreal, Canada.
- **13.08.07–24.08.07:** Master Class: “Electric-Magnetic Duality and the Geometric Langlands Program” by A. Kapustin, CTQM, Aarhus, Denmark.
- **14.05.07–15.05.07:** Clay Research Conference 2007, Harvard University, Cambridge MA, USA.
- **20.04.07–22.04.07:** Workshop “Recent Developments in Symplectic Topology”, Clay Mathematics Institute, Cambridge MA, USA.
- **17.11.06–19.11.06:** Current Developments in Mathematics 2006, Harvard University, Cambridge MA, USA.
- **06.10.06–10.10.06:** Workshop “Moduli spaces of vector bundles, with a view toward coherent sheaves”, Clay Mathematics Institute, Cambridge MA, USA.
- **13.07.06–23.07.06:** Workshop on Mathematics of String Theory 2006, ANU, Canberra, Australia.
- **05.09.05–08.09.05:** Australian-Japanese Workshop on Real and Complex Singularities, University of Sydney, Australia.
- **29.08.05–02.09.05:** Workshop on Mathematics of String Theory, University of Melbourne, Australia.
- **08.01.05–15.01.05:** NZMRI 2005 Summer Workshop, Napier, New Zealand.
- **02.12.04–04.12.04:** Meeting “Modern Developments in Lie Theory, Quantum Theory and Statistical Mechanics”, Coolangatta, Australia.
- **30.11.04–01.12.04:** AMSI Workshop “Foundations and Methodologies of Mathematical Physics”, Coolangatta, Australia.
- **28.09.04–01.10.04:** 48th Annual Meeting of the Australian Mathematical Society, RMIT, Melbourne, Australia.
- **17.01.04–24.10.04:** 24th Winter School “Geometry and Physics”, Srní, Czech Republic.
- **28.07.03–02.08.03:** XIV International Congress on Mathematical Physics, University of Lisbon, Portugal.
- **25.07.03–26.07.03:** Young Researchers Symposium on Mathematical Physics, Instituto Superior Técnico, Lisbon, Portugal.
- **28.11.02–30.11.02:** Prospects in Geometry 2003, MPI for Mathematics in the Sciences, Leipzig, Germany.
- **01.07.02–06.07.02:** Workshop on Integrable Theories, Solitons and Duality, IFT, São Paulo, Brazil.
- **24.03.02–20.04.02:** Clay Mathematics Institute School on Geometry and String Theory, Isaac Newton institute for Mathematical Sciences, Cambridge, UK.
- **10.09.01–16.09.01:** Workshop “Solitonic Objects in Field and String Theories”, KIAS, Seoul, South Korea.
- **13.08.01–24.08.01:** Workshop “What is Integrability?”, Isaac Newton Institute, Cambridge, UK.

- **23.03.01** Differential Geometry Day at Leeds, University of Leeds, UK.
- **15.11.00–16.11.00** Meeting “Topological Methods in the Physical Sciences”, Royal Society, London, UK.
- **17.07.00–22.07.00:** XIII International Congress of Mathematical Physics, Imperial College, London, UK.
- **24.08.99–03.09.99:** Workshop “The Geometry and Physics of Monopoles”, ICMS, University of Edinburgh, UK.
- **02.07.99–05.07.99:** VIII Oporto Meeting on Geometry, Topology and Physics, University of Oporto, Portugal.
- **22.04.99–23.04.99:** LMS Meeting “Interfaces in Mathematics”, Royal Society, London, UK.
- **16.12.98–18.12.98:** Lisbon School on Superstrings, IST, Lisbon, Portugal.
- **01.09.97–10.09.97:** EMS Summer School on “Noncommutative Geometry and Applications”, Monsaraz and Lisbon, Portugal.

10. Teaching experience

10.1. Lecture courses:

- **Winter Semester, 2016/17:** Lecturer of the course **Moduli of Symplectic Vortices** (26 lectures), Department of Mathematics, University of Augsburg, Germany (geometry and topology of moduli spaces for the vortex equations in Kähler fibrations, with applications). Official webpage: https://digicampus.uni-augsburg.de/dispatch.php/course/details?sem_id=60cef15ae4a0c73e6f7876d28254267c
- **Spring Semester, 2010:** Lecturer of the MSc/PhD course **Symplectic Geometry** (30 lectures), Institute of Mathematics, Jagiellonian University, Cracow, Poland (introduction to symplectic geometry, including some topics of interaction with mathematical physics). Materials available online at: <https://www.uni-math.gwdg.de/nromao/SG/SymplecticGeometry.html>
- **Spring Term, 2008:** Lecturer of the PhD course **Geometric Quantum Field Theory** (48 lectures), Department of Mathematical Sciences, Aarhus University, Denmark (covered fundamental concepts of QFT from a mathematical perspective, and some of their applications in geometry and topology). Course layout available online at: <http://aula.au.dk/courses/IMFGQFTF08/>
- **Semester 1, 2006:** Lecturer of **Mathematics 1A**, University of Adelaide, Australia (introductory course in calculus and linear algebra for large classes of first-year students in Mathematics, Engineering and the Sciences).
- **16.01.06–28.01.06:** Invited Lecturer of the honours course **Algebraic Curves** at the 4th ICE-EM/AMSI Summer School for Honours and Postgraduate Students in the Mathematical Sciences, RMIT, Melbourne, Australia (28 lectures, joint (1:1) with Dr Emma Carberry). Materials available online at: <https://www.uni-math.gwdg.de/nromao/AC/teaching.html>

10.2. Examples classes and tutorials:

- **2013–2015:** Assistant in various introductory courses of the mathematical curriculum at the University of Göttingen, Germany: **Analytische Geometrie und Lineare Algebra I+II**, **Mehrdimensionale Analysis für Physiker I**, **Differenzial- und Integralrechnung II+III**. This included ‘Saalübung’ (problem-solving techniques and extra material, taught at the blackboard in large groups), ‘Übungsgruppe’ (marking homework and blackboard solution of examples sheets in small groups), ‘Praktikum’ (tutorials for students solving problems in real time); design of examples sheets and examinations; mentoring junior teaching assistants; organising and marking final exams.

- **2008/09:** ‘Matematisk Laboratorium’ (problem-solving classes) in **Calculus 2** and **Lineær Algebra** for first-year students in the Sciences, Aarhus University, Denmark.
- **Easter Term 2002:** Blackboard examples classes for the graduate course **Yang–Mills Field Theory** in Part III of the Mathematical Tripos, University of Cambridge, UK.
- **1999–2002:** Supervisor for Part IB of the Mathematical Tripos, University of Cambridge, UK (courses: **Geometry**, **Linear Mathematics**, **Quadratic Mathematics**).
- **1995–1997:** Undergraduate Teaching Assistant at the Department of Mathematics of IST, Lisbon, Portugal (courses: **Análise Matemática III** and **IV**).

11. Organisation of scientific meetings

- **February 2021:** Co-organiser of the programme “Vortex Moduli” (jointly with Sushmita Venugopalan), to be held at the International Centre for Theoretical Science, Bangalore, India, from the 15th to the 26th of February 2021.
<https://www.icts.res.in/program/vort2021>
- **November 2019:** Co-organiser of the workshop “Novel Vistas on Vortices” (jointly with Mathew Bullimore and Sushmita Venugopalan), held at the Simons Center for Geometry and Physics, Stony Brook University, USA, from the 11th to the 15th of November 2019,
<http://scgp.stonybrook.edu/archives/29486>
- **November 2014:** Co-organiser of the workshop “Gauged Sigma-Models in Two Dimensions” (jointly with Sergei Gukov and Samson Shatashvili), held at the Simons Center for Geometry and Physics, Stony Brook University, USA, from the 3rd to the 7th of November 2014,
<http://scgp.stonybrook.edu/archives/10436>
- **September–December 2012:** Leader (PI) of the research group “**Geometry of Gauged Vortices**” at the Junior Hausdorff Trimester Program “Mathematical Physics”, HIM, University of Bonn, Germany. The activities of this group as of July 2014 are documented in a final report available at
http://www.him.uni-bonn.de/uploads/media/report_GGVortices.pdf
The other members of this research group were: Dennis Eriksson (MPIM Bonn), Eduardo González (UMass Boston), Lotte Hollands (Caltech + Oxford), Ignasi Mundet i Riera (Barcelona), Timothy Nguyen (SCGP Stony Brook), Andreas Ott (Cambridge), Martin Speight (Leeds), Christian Wegner (Bonn), Fabian Ziltener (Utrecht).
- **2012:** Organiser of the workshop “Geometry of the Vortex Equations”, Hausdorff Research Institute for Mathematics (HIM), University of Bonn, Germany, from the 27th to the 30th of November 2012,
<https://www.him.uni-bonn.de/en/programs/past-programs/past-junior-trimester-programs/mathematical-physics/workshop-geometry-of-the-vortex-equations/>
- **September–December 2012:** Organiser of the Vortex Seminar at the Junior Hausdorff Trimester Program “Mathematical Physics”, HIM, University of Bonn, Germany,
<https://www.him.uni-bonn.de/en/programs/past-programs/past-junior-trimester-programs/mathematical-physics/vortex-seminar/>
- **September–December 2012:** Co-organiser of the joint Trimester Seminar at the Junior Hausdorff Trimester Program “Mathematical Physics”, HIM, University of Bonn, Germany,
<https://www.him.uni-bonn.de/en/programs/past-programs/past-junior-trimester-programs/mathematical-physics/trimester-seminar/>
- **2010:** Co-organiser of the conference “Geometry and Physics in Cracow” held at the Jagiellonian University in Cracow, Poland, from the 21st to the 25th of September 2010,
<http://sites.google.com/site/geometryandphysics/>
- **2009/10:** Organiser of the Mathematical Physics Seminar at the Jagiellonian University, Cracow, Poland,
<https://www.uni-math.gwdg.de/nromao/MPSeminarUJ/MathPhysSeminar.html>
- **2001/02:** Co-organiser of the Mathematical Physics Seminar at DAMTP, University of Cambridge, UK.

12. Other activities

- Referee for: Communications in Mathematical Physics, Journal of Geometry and Physics, Journal of Mathematical Physics, Proceedings of the American Mathematical Society, Bulletin of the London Mathematical Society, Mathematical Proceedings of the Cambridge Philosophical Society, Nonlinearity, Journal of Physics A: Mathematical and Theoretical, SIGMA (Symmetry, Integrability and Geometry: Methods and Applications), Reports on Mathematical Physics, Classical and Quantum Gravity, Physics Letters A, The European Physical Journal C, Europhysics Letters, Physica Scripta, and for a book series of the American Mathematical Society.
- Evaluator (“independent external expert”) for the European Cooperation for Science and Technology (COST) Association.
- Junior Treasurer (’98/99) and E’nts Officer (’99/00) of the Cambridge University Portuguese Society, Cambridge, UK.
- **01.07.1997–29.08.1997:** Summer Student at CERN, Geneva, Switzerland.

13. Language and computer skills

Fluency in both spoken and written **Portuguese** (mother tongue), **English**, **French** (“Diplôme Supérieur d’Études Françaises Modernes”, Alliance Française) and **German** („Zentrale Mittelstufenprüfung”, Goethe-Institut). Good knowledge of both spoken and written **Danish** (“Prøve i Dansk 3”, Lærdansk Århus) and **Spanish**. Passable knowledge of **Italian** and **Polish** (“Certyfikat A2 – poziom wstępny”, Szkoła Języka i Kultury Polskiej UJ). Some working knowledge of technical **Russian** (one semester of “Russisch für Ingenieure und Naturwissenschaftler” completed at the University of Hanover).

Programming experience in C++, Fortran, Mathematica, HTML and T_EX.

Comfortable using Unix/Linux, Mac OS X and all the current types of software applications.

Some experience in designing/maintaining websites and managing webforms.

Full Name: Lucas Kaufmann Sacchetto

Current position

04-2018 – **Research Fellow**, *National University of Singapore*, Singapore.

Previous positions

- 09-2016 – **Postdoc**, *Department of Mathematical Sciences of Chalmers University of Technology and University Gothenburg*, Göteborg, Sweden.
04-2018
2015-2016 **ATER**, Temporary Researcher and Teaching Assistant, UPMC - Paris VI, France.
2012-2015 **PhD student**, Funded by the "Fondation de Sciences Mathématiques de Paris", UPMC - Paris VI, France.

Education

- 2012–2016 **PhD**, *Université Pierre et Marie Curie (Paris VI)*, Paris, France, Title: Holomorphic Dynamics, Pluripotential Theory and Applications.
Advisors: T.-C. Dinh and Elisha Falbel
2010–2012 **MSc in Pure Mathematics**, *Universidade de São Paulo*, São Paulo, Brazil, Dissertation: "Foundations of Complex Geometry" (in Portuguese).
Advisor: C. Gorodski
2006–2009 **BSc in Mathematics**, *Universidade de São Paulo*, São Paulo, Brazil, Undergraduate research project: Algebraic Curves and Riemann Surfaces.
Advisor: C. Gorodski

Papers

Published or Accepted

- T.-C. Dinh, L. Kaufmann, H. Wu**, "Products of random matrices: a dynamical point of view", *Pure and Applied Mathematics Quarterly*, accepted (2020).
T.-C. Dinh, L. Kaufmann, H. Wu, "Dynamics of correspondences on Riemann Surfaces", <https://doi.org/10.1142/S0129167X20500366>, *International Journal of Mathematics* (2020).
L. Kaufmann, D.-V. Vu, "Density and intersection of $(1,1)$ -currents", *Journal of Functional Analysis*, Volume 277, Issue 2 (2019).
L. Kaufmann, "Self-intersection of foliation cycles on complex manifolds", *International Journal of Mathematics*, 28 (2017).
L. Kaufmann, "Commuting pairs of endomorphisms of \mathbb{P}^2 ", *Ergodic Theory and Dynamical Systems* - Volume 38, Issue 3 (2018), <http://dx.doi.org/10.1017/etds.2016.54>.
L. Kaufmann, "A Skoda-type integrability theorem for singular Monge-Ampère measures", *Michigan Mathematical Journal*, Volume 66, Issue 3 (2017).

Pre-prints

- D.-T. Huynh, L. Kaufmann, D.-V. Vu**, "Intersection of $(1,1)$ -currents and the domain of definition of the Monge-Ampère operator", pre-print, <https://arxiv.org/abs/2003.12501>.

Monographs

- 2016 **L. Kaufmann Sacchetto**, "Dynamique holomorphe, théorie du pluripotentiel et applications", Doctoral thesis. Available at <https://tel.archives-ouvertes.fr/tel-01401965>.

- 2012 **L. Kaufmann Sacchetto**, "*Foundations of Complex Geometry: geometrical, topological and analytical aspects*", Masters dissertation (in Portuguese). Available at <http://arxiv.org/abs/1205.6028>.

Teaching Experience

- Jan. – May 2020 **Graduate course**, Title: *Random walks on Linear Groups*. Duration: 3 hours per week. Form of teaching: course and syllabus proposal, full course planning, lecturing, preparation of course material (lecture notes) and grading., National University of Singapore.
Students' evaluation: 4.7/5
- Jan. – May 2019 **Tutoring**, Title: *Linear Algebra I*. Level: undergraduate course, first year. Duration: 2 hours per week. Form of teaching: exercise sessions and grading midterm exams., National University of Singapore.
Students' evaluation: 3.8/5
- Apr. 2018 – Mar. 2020 **Substitute teacher**, Sporadic substitute for lectures and exercise sessions. Around 4 lectures per semester. Title: *Complex Analysis, Riemann Surfaces*. Level: undergraduate, second and third year, National University of Singapore.
- Aug. – Oct 2017 **Teaching Assistant**, Title: *Complex Analysis*. Level: undergraduate course, third year. Duration: 2 hours per week. Form of teaching: exercise sessions, Chalmers University of Technology.
- Mar. – May 2017 **Teaching Assistant**, Title: *Several Variable Calculus*. Level: undergraduate course, second year. Duration: 8 hours per week. Form of teaching: exercise sessions (50 %) and computer lab sessions (MATLAB) (50 %), Chalmers University of Technology.
- Sep. 2015 – Aug. 2016 **Teaching Assistant**, Title: several courses, including: *Interdisciplinary research workshop in Chemistry – Mathematics; Several Variable Calculus*. Level: undergraduate courses, first and second year. Duration: 96 hours in total. Form of teaching: exercise sessions, lectures, computer labs. Also responsible for preparing and grading homework and tests, UPMC - Paris VI.
- Jan. 2015 – Aug. 2015 **Teaching Assistant**, Title: several courses, including: *Interdisciplinary research workshop Physics–Mathematics; Several Variable Calculus, Linear Algebra*. Level: undergraduate courses, first and second year. Duration: 64 hours per year. Form of teaching: exercise sessions, lectures, computer labs. For the *Interdisciplinary research workshop in Physics–Mathematics I* was one of the responsables for the course planning. Also responsible for preparing and grading homework and tests, UPMC - Paris VI.
- 2015 **Collaboration in course planning**, *Interdisciplinary research workshop in Physics– Mathematics*, UPMC - Paris VI.
- 2008-2012 **Teaching Assistant**, Title: several courses, including: *Calculus, Differential Geometry*. Level: undergraduate courses, first to third year. Duration: sporadically, usually 2 hours per week. Form of teaching: exercise sessions and tutoring., Universidade de São Paulo - Brazil.

Teaching training

- 2020 (upcoming) **Continuing Professional Development Sessions**, *Promoting Student Engagement in Large Classes*, three-hour lecture, National University of Singapore.
- 2020 **Zoom for online teaching**, two-hour webinar, National University of Singapore.
- 2019 **Faculty of Science Annual Teaching Workshop**, *Authentic learning in higher education*, one-day workshop, National University of Singapore.
- 2014-2016 **Teaching preparation lectures**, *Two-day lectures held yearly aimed at preparing PhD students for teaching at the university*, UPMC - Paris VI.

Teaching Material

- 2020 **Lecture Notes - Random Walks on Matrix Groups**, lecture notes for a PhD course, 60 pages, available under request, National University of Singapore.
- 2012 **L. Kaufmann Sacchetto**, "*Foundations of Complex Geometry: geometrical, topological and analytical aspects*", Masters dissertation (in Portuguese). Available at <http://arxiv.org/abs/1205.6028>, has been used as main reference for a graduate course at Univ. of São Paulo and as auxiliary reference for a graduate course at Federal Univ. of Rio de Janeiro.

Supervision

- 2019 **Assistant supervisor**, *assistance in the supervision of Hao Wu, PhD Student at NUS. Main supervisor: T.-C. Dinh*, National University of Singapore.

Outreach

- 2014 **Raconte-moi ta thèse**, “*speed meeting*” where I had to explain my research for the general public, Institut Henri Poincaré. Paris - France.

Administrative Responsibilities

- 2013-2015 **Member of Department's Board**, PhD students' representative at the Departmental Board of the “Institut de Mathématiques de Jussieu - Paris Rive Gauche” - Paris VI and VII.

Organizational activities

- Nov. 2019 **One-day workshop on Dynamics and Geometry**, Co-organizer, National University of Singapore.
2018-2020 **Geometry and Topology seminar**, Organizer, National University of Singapore.
2017-2018 **KASS Complex Analysis seminar**, Organizer, Chalmers University of Technology.

Grants and Awards

- 2018 - **Funding from National University of Singapore**, Research funding and travel grant, SGD 15K.
2016 **Travel grant**, awarded by the Chalmers Research Fund for a two week stay at IMPA - Rio de Janeiro, single applicant.
2012-2015 **Funding from the Fondation de Sciences Mathématiques de Paris**, Research funding and travel grant awarded by the French government (Région Île-de-France), €5K for 3 years.
2010-2012 **Master's scholarship**, awarded by the Brazilian government (FAPESP), funding and travel grant.
2009 **Honorable Mention**, for excellent academic performance during undergraduate program, Universidade de São Paulo.
2008-2009 **Undergraduate research grant**, awarded by the Brazilian government (FAPESP).

Talks in conferences and workshops

- Jun. 2021 (upcoming) **Randomness in Complex Analysis and Geometry**, Nesin Mathematics Village - Turkey.
May. 2020 **First Virtual Conference on Complex Analysis and Geometry**, Online conference.
Jan. 2020 **Workshop on Geometric structures and Representation Varieties**, Singapore.
Dec. 2019 **Taipei Conference on Complex Geometry**, Taipei - Taiwan.
Nov. 2019 **Rencontre ANR Fatou**, Orléans - France.
Nov. 2019 **TMS-TFS Colloquium - Complex Geometry and Dynamics**, Oslo - Norway.
Jul. 2019 **First Joint Meeting Brazil-France in Mathematics**, IMPA - Rio de Janeiro - Brazil.
Jun. 2019 **AMS International Meeting - Special Session: Complex Geometry and Dynamical Systems**, Quy Nhon - Vietnam.
Jun. 2019 **Complex Analysis, PDEs and applications**, Hanoi - Vietnam.
Jan. 2019 **Workshop on Complex Geometry and related topics**, Singapore.
Dec. 2018 **Mapping Problems and Complex Manifolds in Projective Spaces**, Oslo - Norway.
Mar. 2016 **KAWA 7 - Komplex Analysis Winter School**, Albi - France.
Sep. 2015 **Rencontre ANR Lambda**, Amiens - France.
Dec. 2014 **First Brazilian Congress of Young Researchers in Pure and Applied Mathematics**, São Paulo - Brazil.

Seminar talks

Geometry and Dynamics online seminar (organized by Nice and Warwick - Jun. 2020), *KASS Seminar at Chalmers* (Göteborg - Nov. 2019), *Geometry Seminar at IME-USP* (São Paulo - Jun. 2019), *Complex Analysis Seminar at UiO* (Oslo - Nov. 2018), *KASS Seminar at Chalmers* (Göteborg - Sep. 2018), *Complex Analysis Seminar at*

UiO (Oslo - Feb. 2018), *KASS Seminar at Chalmers* (Göteborg - Nov. 2017), *Complex Analysis and Differential Equations Seminar* (Lille - Dec. 2016), *Holomorphic Foliations Seminar at IMPA* (Rio de Janeiro - Oct. 2016), *KASS Seminar at Chalmers* (Göteborg - Oct. 2016), *Geometry Seminar at IME-USP* (São Paulo - May 2016), *Mathematics Seminar at UNIFESP* (São José dos Campos - May 2016), *Analytic Geometry Seminar* (Rennes - Feb. 2016), *Complex Analysis and Differential Equations Seminar* (Lille - Feb. 2016), *Complex Geometry Seminar* (Nancy - Jan. 2016) *Séminaire des Thésards de l'IMJ - Student's Seminar* (Paris - May 2014), *Geometry Seminar at IME-USP* (São Paulo - Jul. 2012).

Scientific visits

- Nov. 2019 **Chalmers University of Technology**, *four-day visit hosted by E. Wulcan*, Gothenburg - Sweden.
- Nov. 2019 **University of Oslo (UiO)**, *one-week visit hosted by T. Truong*, Oslo - Norway.
- Nov. 2018 **University of Oslo (UiO)**, *one-week visit hosted by T. Truong*, Oslo - Norway.
- Sep. 2018 **Chalmers University of Technology**, *four-day visit hosted by E. Wulcan*, Gothenburg - Sweden.
- Feb. 2018 **University of Oslo (UiO)**, *four-day visit hosted by T. Truong*, Oslo - Norway.
- May 2017 **National University of Singapore**, *Two-week stay, hosted by T.-C. Dinh*, Singapore.
- Oct. 2016 **IMPA**, *Two-week stay, hosted by J.V. Pereira and C. Favre*, Rio de Janeiro - Brazil.
- Dec. 2015 **National University of Singapore**, *Three-week stay as part of my PhD*, Singapore.
- Nov. 2014 **National University of Singapore**, *Three-week stay as part of my PhD*, Singapore.
- Jul. 2014 **Centro Ennio de Giorgi**, *One-week stay as part of my PhD*, Pisa - Italy.

Conferences attended

Bifurcation and stability in Complex Dynamics (Kyoto - Dec. 2019), *Stein Manifolds and Holomorphic Mappings* (Ljubljana - Sep. 2018), *Recent progress in Several Complex Variables* (KIAS, Seoul - Apr. 2018), *Complex Dynamics: Iterations, Foliations and Evolutions* (Oslo - June 2018), *Families of algebraic dynamical systems* (Rennes - June 2017), *Complex Analytic and Differential Geometry* (Grenoble - June 2017), *Complex Geometry, Dynamical Systems and Foliation Theory* (Singapore, May 2017), *NORDAN - Nordic Complex Analysis Conference* (Gothenburg, May 2017), *Recent Advances in Complex Differential Geometry* (Toulouse - June 2016), *Journées Complexes Lorraines* (Nancy - Sep. 2015), *Metric and Dynamical Aspects in Complex Analysis* (Lille - May 2015), *KAWA 6 - Komplex Analysis Winter School* (Pisa - Mar. 2015), *Conference in Honour of Pierre Doubeault* (Paris - June 2014), *KAWA 5 - NORDAN - Komplex Analysis Winter School* (Marseille - Mar. 2014), *Arithmetic Algebraic Geometry* (Berlin - Jun 2013), *Advanced School and Workshop in Real and Complex Dynamics* (Trieste May 2013), *Complex and Riemannian Geometry* (Marseille - Jan 2011)

Referee

- Referee for Journal of Geometric Analysis and Mathematische Zeitschrift
- Reviewer for Mathscinet

Language Skills

- Portuguese (Native), English (Fluent), French (Fluent), Spanish (Intermediate)

References

- Tien-Cuong Dinh - National University of Singapore - matdtc@nus.edu.sg
- Bo Berndtsson - Chalmers University of Technology - bob@chalmers.se
- Nessim Sibony - Université Paris Sud (Orsay) - Nessim.Sibony@math.u-psud.fr
- David Witt Nyström - University of Gothenburg - david.witt.nystrom@gu.se
- Elisha Falbel - UPMC-Paris VI - elisha.falbel@imj-prg.fr
- Wee Teck Gan (teaching reference) - National University of Singapore - matgwt@nus.edu.sg

Luca Schaffler, Curriculum Vitae

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Lederle Graduate Research Tower
Department of Mathematics & Statistics
Amherst, MA 01003

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Email: schaffler@math.umass.edu
Web: <http://people.math.umass.edu/~schaffler/>

Research Interests

Algebraic geometry. Compactifications of moduli spaces of algebraic surfaces, K_3 surfaces and Enriques surfaces, compactifications of moduli spaces of hyperplane arrangements and point arrangements, effective cycles on moduli spaces, classical algebraic geometry.

Positions Held after PhD

- Marshall H. Stone Visiting Assistant Professor, University of Massachusetts Amherst
Dates: September 1, 2017 – August 31, 2020
Research mentor: Prof. Jenia Tevelev
- Research Assistant, University of Georgia
Dates: May 1, 2017 – July 31, 2017
Research mentor: Prof. Valery Alexeev

Education

- Ph.D. Mathematics, University of Georgia, 2012 – 2017
Thesis title: The KSBA Compactification of a 4-dimensional Family of Polarized Enriques Surfaces
Advisor: Prof. Valery Alexeev
Date of thesis defense: April 25, 2017
- M.S. Mathematics, Roma Tre University, 2010 – 2012
Thesis title: Distribution of Rational Points on Algebraic Curves
Advisor: Prof. Lucia Caporaso
Grade: 110/110 cum laude
- B.S. Mathematics, Roma Tre University, 2007 – 2010
Final test: comprehensive exam
Grade: 110/110 cum laude

Last update: June 10, 2020.

Publications and Preprints

- *Geometric interpretation of toroidal compactifications of moduli of points in the line and cubic surfaces* (with P. Gallardo and M. Kerr), (2020). Submitted. arXiv:2006.01314
- *Point configurations, phylogenetic trees, and dissimilarity vectors* (with A. Caminata, N. Giansiracusa, and H.-B. Moon), (2020). Submitted. arXiv:2005.02629
- *Decomposition of Lagrangian Classes on K_3 Surfaces* (with K.-W. Lai and Y.-S. Lin), (2020). Submitted. arXiv:2001.00202
- *A Pascal's theorem for rational normal curves* (with A. Caminata), (2019). Submitted. arXiv:1903.00460
- *KSBA compactification of the moduli space of K_3 surfaces with purely non-symplectic automorphism of order four* (with H.-B. Moon), (2018). Submitted. arXiv:1809.05182
- *Equations for point configurations to lie on a rational normal curve* (with A. Caminata, N. Giansiracusa, and H.-B. Moon). Adv. Math. 340 (2018), 653–683.
- *K_3 surfaces with \mathbb{Z}_2^2 symplectic action*. Rocky Mountain J. Math. 48 (2018), no. 7, 2347–2383.
- *The KSBA compactification of the moduli space of $D_{1,6}$ -polarized Enriques surfaces*, (2016). Submitted. arXiv:1608.02564
- *On the cone of effective 2-cycles on $\overline{M}_{0,7}$* . Eur. J. Math. 1 (2015), no. 4, 669–694.

In Preparation

- *Compactifications of moduli of points and lines in \mathbb{P}^2* (with J. Tevelev). Available upon request.

Awards and Honors

- Research Support Fund, Massachusetts Society of Professors, Academic Year 2019-2020, \$1000.
- Research Support Fund, Massachusetts Society of Professors, Academic Year 2018-2019, \$1000.
- Marshall H. Stone Visiting Assistant Professor travel funding, \$2000 per academic year, 2017-2020.
- Dissertation Completion Award, University of Georgia, May 2016.
- William Armor Wills Memorial Scholarship Award, University of Georgia, Department of Mathematics, April 2016.
- Outstanding Teaching Assistant Award, University of Georgia, March 2016.
- NSF Funding (PI: Valery Alexeev), University of Georgia, Fall 2015, Summer 2016 and 2017.
- RTG Funding, University of Georgia, Spring 2016.
- Graduate School Research Assistantship, University of Georgia, Summer 2013, 2014, and 2015.
- Graduate Student Teaching Assistantship, University of Georgia, Fall 2012 – Spring 2015.

External Talks

- Rutgers University, Algebra Seminar, online, April 29, 2020.
- KTH, Fika webinar, online, April 23, 2020.
- Texas A&M University, Hodge Theory, Arithmetic and Moduli II, College Station, February 8, 2020.
- Texas A&M University, Algebra and Combinatorics Seminar, College Station, February 7, 2020.
- Washington University in St. Louis, Algebraic Geometry Seminar, St. Louis, January 15, 2020.
- Pontificia Universidad Católica de Chile, Algebraic Geometry Seminar, Santiago, January 8, 2020.
- Duke University, Algebraic Geometry Seminar, Durham, August 30, 2019.
- Sapienza University of Rome, Algebra and Geometry Seminar, Rome, June 26, 2019.
- PIMS Symposium on Hodge Theory, Arithmetic and Moduli, University of British Columbia, Vancouver, May 15, 2019.
- BATMOBYLE, Amherst College, Amherst, May 2, 2019.
- Washington University in St. Louis, Algebraic Geometry Seminar, St. Louis, February 27, 2019.
- University of Connecticut, Algebra Seminar, Storrs, November 14, 2018.
- Universitat de Barcelona, Barcelona Algebraic Geometry Seminar, Barcelona, June 8, 2018.
- Yale University, Yale Algebraic and Tropical Geometry Seminar, April 26, 2018.
- Northeastern University, Geometry, Physics, and Representation Theory Seminar, April 2018.
- Stony Brook University, Algebraic Geometry Seminar, October 4, 2017.
- Hodge Theory, Moduli and Representation Theory, Stony Brook University, August 17, 2017.
- Colorado State University, FRAGMENT seminar, Fort Collins, May 4, 2017.
- Nagoya University, Algebraic Geometry Seminar, Nagoya, April 17, 2017.
- Kyoto University, Algebraic Geometry Seminar, Kyoto, April 14, 2017.
- Workshop on Algebraic Varieties, Hodge Theory and Motives, Fields Institute, Toronto, March 12, 2017.
- Duke University, Algebraic Geometry Seminar, Durham, February 17, 2017.
- Focused Research Group on Hodge Theory, Moduli and Representation Theory: Workshop VIII, Washington University in St. Louis, St. Louis, January 8, 2017.
- Joint Mathematics Meetings, AMS Contributed Paper Session on Algebraic Geometry, Atlanta, January 6, 2017.
- Leibniz Universität Hannover, Research Seminar Algebraic Geometry, Hannover, Germany, December 2016.
- American Institute of Mathematics, Workshop on Positivity of Cycles, San Jose, August 4, 2016.
- University of Catania, "Giornate di Geometria Algebrica ed Argomenti Correlati XIII", Catania, Italy, May 25, 2016.
- University of Utah, Algebraic Geometry Bootcamp, research group talk, Salt Lake City, July 2015.
- Roma Tre University, Algebraic Geometry Seminar, Rome, Italy, June 4, 2015.

Talks at the University of Massachusetts Amherst

- Reading Seminar in Algebraic Geometry, March 9, 2020. Title: *Homological mirror symmetry for elliptic curves. II.*
- Valley Geometry Seminar, January 31, 2020. Title: *A Pascal's theorem for rational normal curves.*
- Reading Seminar in Algebraic Geometry, October 4, 2019. Title: *Lattice theory, K_3 surfaces, and the Torelli theorem.*
- Discrete Math Seminar, September 12, 2019. Title: *Reconstructing degenerations of hyperplane arrangements.*
- Reading Seminar in Algebraic Geometry, February 22, 2019. Title: *Introduction to toric varieties.*
- Valley Geometry Seminar, February 15, 2019. Title: *Compactifications of the moduli space of K_3 surfaces with order 4 purely non-symplectic automorphism*
- Reading Seminar in Algebraic Geometry, October 19, 2018. Title: *The Mukai lattice of the Kuznetsov component.*
- Reading Seminar in Algebraic Geometry, February 16, 2018. Title: *The moduli space of 8 points on \mathbb{P}^1 and automorphic forms, following S. Kondo.*
- Valley Geometry Seminar, February 9, 2018. Title: *Equations for points to lie on a rational normal curve.*
- Reading Seminar in Algebraic Geometry, October 23, 2017. Title: *\mathbb{Q} -Gorenstein deformations of surface singularities.*
- Valley Geometry Seminar, October 20, 2017. Title: *Toward a compactification of the moduli space of Enriques surfaces by KSBA stable pairs.*

Talks at the University of Georgia

- Graduate Student Summer Conference, July 26, 2017. Title: *Hyperbolic spaces and reflections.*
- FIRST Seminar, February 27, 2016. Title: *Looijenga semitoric compactifications.*
- FIRST Seminar, October 3, 2016. Title: *Singular K_3 surfaces.*
- Graduate Students Seminar, September 20, 2016. Title: *The arithmetic of Enriques surfaces.*
- Mock AMS Conference, July 27, 2016. Title: *Polyhedral subdivisions of the unit cube.*
- Algebraic Geometry Seminar, May 11, 2016. Title: *The KSBA compactification of the moduli space of $D_{1,6}$ -polarized Enriques surfaces.*
- Graduate Students Seminar, October 27, 2015. Title: *Fiber polytopes.*
- Mock AMS Conference, July 29, 2015. Title: *The secondary polytope.*
- Tuesday Algebraic Geometry Student Seminar, April 21, 2015. Title: *Introduction to Enriques surfaces and their moduli.*
- Algebraic Geometry Seminar, November 19, 2014. Title: *On the cone of effective 2-cycles on $\overline{M}_{0,7}$.*
- VIGRE group talk, Spring 2014. Title: *Witten conjecture.*

- VIGRE group talk, Fall 2013. Title: *Algebraic geometry and analytic geometry*.
- VIGRE group talk, Fall 2013. Title: *Riemann surfaces*.
- Mock AMS Conference, July 31, 2013. Title: *Moduli spaces and the Hilbert scheme*.
- VIGRE group talk, Spring 2013. Title: *Blow up of affine schemes, fat points and universal property of the blow up*.
- VIGRE group talk, Spring 2013. Title: *Blowing up subvarieties*.

Poster Presentations

- Ideals, Varieties, Applications: Celebrating the Influence of David Cox, Amherst College, June 11, 2019. Title: *A Pascal's theorem for rational normal curves*.
- AGNES, Brown University, September 22, 2018. Title: *Compactifications of moduli spaces of points and lines*.
- Birational Geometry and Moduli Spaces, INdAM, June 14, 2018. Title: *Compactifications of moduli spaces of points and lines*.
- AGNES, Northeastern University, October 14, 2017. Title: *K_3 surfaces with \mathbb{Z}_2^2 symplectic action*.
- AGNES, University of Massachusetts Amherst, November 5, 2016. Title: *The KSBA compactification of the moduli space of $D_{1,6}$ -polarized Enriques surfaces*.
- WAGS, Colorado State University, October 15, 2016. Title: *The KSBA compactification of the moduli space of $D_{1,6}$ -polarized Enriques surfaces*.
- AGNES, Brown University, October 3, 2015. Title: *On the cone of effective 2-cycles on $\overline{M}_{0,7}$* .

Conferences/Workshops Attended

- Hodge Theory, Arithmetic and Moduli, Texas A&M University, College Station, February 8–9, 2020.
- AGNES, Boston College, Chestnut Hill, September 20–22, 2019.
- Ideals, Varieties, Applications: Celebrating the Influence of David Cox, Amherst College, Amherst, June 10–14, 2019.
- PIMS Symposium on Hodge Theory, Arithmetic and Moduli, University of British Columbia, Vancouver, May 13–17, 2019.
- Recent Progress in Moduli Theory, MSRI, Berkeley, May 6–10, 2019.
- BATMOBYLE, Amherst College, Amherst, May 2, 2019.
- AGNES, University of Massachusetts Amherst, Amherst, March 22–24, 2019.
- AGNES, Brown University, Providence, September 21–23, 2018.
- Combinatorial Algebraic Geometry Retrospective Workshop, Fields Institute, Toronto, June 18–22, 2018.
- Birational Geometry and Moduli Spaces, INdAM, Rome, June 11–15, 2018.

- AGNES, Rutgers University, New Brunswick, April 13–15, 2018.
- Georgia Algebraic Geometry Symposium, Georgia Institute of Technology, Atlanta, February 23–25, 2018.
- AGNES, Northeastern University, Boston, October 13–15, 2017.
- Conference on Birational Geometry, Simons Foundation, New York, August 21–25, 2017.
- Hodge Theory, Moduli and Representation Theory, Stony Brook University, August 14–18, 2017.
- Workshop on Algebraic Varieties, Hodge Theory and Motives, Fields Institute, Toronto, March 9–12, 2017.
- Georgia Algebraic Geometry Symposium, University of Georgia, Athens, March 3–5, 2017.
- Joint Mathematics Meetings, Atlanta, January 4–7, 2017.
- Thematic Program on Combinatorial Algebraic Geometry, Workshop on Combinatorial Moduli Spaces and Intersection Theory, Fields Institute, Toronto, December 5–9, 2016.
- AGNES, University of Massachusetts Amherst, Amherst, November 4–6, 2016.
- WAGS, Colorado State University, Fort Collins, October 15–16, 2016.
- Georgia Summer Workshop in Algebraic Geometry, University of Georgia, Athens, August 27–28, 2016.
- Positivity of Cycles, American Institute of Mathematics, San Jose, California, August 1–5, 2016.
- Thematic Program on Combinatorial Algebraic Geometry, Graduate Summer School on Combinatorial Algebraic Geometry, Fields Institute, Toronto, July 18–22, 2016.
- "Giornate di Geometria Algebraica ed Argomenti Correlati XIII", University of Catania, Italy, May 25–28, 2016.
- Spring Southeastern Sectional Meeting, University of Georgia, Athens, March 5–6, 2016.
- Georgia Algebraic Geometry Symposium, Emory University, Atlanta, October 23–25, 2015.
- AGNES, Brown University, Providence, October 2–4, 2015.
- Summer Research Institute on Algebraic Geometry, University of Utah, Salt Lake City, July 13–24, 2015.
- The Graduate Students Bootcamp for the 2015 Algebraic Geometry Summer Research Institute, University of Utah, Salt Lake City, July 6–10, 2015.
- Georgia Algebraic Geometry Symposium, University of Georgia, Athens, October 17–19, 2014.
- Graduate Workshop on Moduli of Curves, Simons Center, Stony Brook University, July 7–18, 2014.
- Georgia Algebraic Geometry Symposium, University of Georgia, Athens, October 18–20, 2013.
- Advanced Course "Compactifying Moduli Spaces", Centre de Recerca Matemàtica, Barcelona, May 27–31, 2013.

Teaching Experience

- University of Massachusetts Amherst
 - Instructor of record
 - Multivariate Calculus, MATH 233, one section, Spring 2020
 - Fundamental Concepts of Mathematics, MATH 300, two sections, Fall 2019
 - Fundamental Concepts of Mathematics, MATH 300, one section, Spring 2019
 - Introduction to Abstract Algebra I, MATH 411, two sections, Fall 2018
 - Fundamental Concepts of Mathematics, MATH 300, one section, Spring 2018
 - Multivariate Calculus, MATH 233, two sections, Fall 2017
- University of Georgia
 - I taught four classes of the graduate level class Introduction to Algebraic Geometry, MATH 8300, Fall 2016
 - Instructor of record
 - Calculus I for Science and Engineering, MATH 2250, Spring 2015
 - Precalculus, MATH 1113, Fall 2014
 - Recitation instructor
 - Analytic Geometry and Calculus, MATH 2200, Fall 2013
 - Grader
 - Real Analysis I, MATH 8100, Fall 2014
 - Graph Theory, MATH 4690/6690, Spring 2014
 - Modern Algebra and Geometry I, MATH 4000/6000, Fall 2013
 - Point Set Topology, MATH 4200/6200, Spring 2013
 - Algebraic Topology, MATH 8200, Spring 2013, Spring 2014
 - Combinatorics, MATH 4670/6670, Fall 2012
 - Real Analysis, MATH 4100/6100, Fall 2012
 - Tutor
 - Precalculus and Calculus (Study Hall)
- Roma Tre University
 - Tutor
 - Complex Analysis, AC310, Fall 2010
 - Mathematical Physics, FM1, Spring 2010

Mentoring Experience

- REU at the University of Massachusetts Amherst, Summer 2018. Student: Patrick Lei.
 - For the background we covered Miles Reid's "*Undergraduate algebraic geometry*".
 - The research project was related to the paper: arXiv:1711.06286

Outreach

- Undergraduate Math Club Talk, University of Massachusetts Amherst, "*Precalculus of lines and conics in the projective plane*", October 2018.
- UGA High School Math Tournament, 2016.
 - The day of the tournament I helped with registration, proctoring, and grading.
 - I designed the picture on the tournament T-shirt.
 - I drew most of the pictures for the tournament problems.
 - I helped with writing test problems and solutions.
- UGA High School Math Tournament, 2015. I helped with writing test problems and solutions.

Organizational Experience

- I organized the poster session for the conference AGNES in UMass Amherst, March 2019

Service

- University of Massachusetts Amherst
 - Jacob-Cohen-Killam competition, University of Massachusetts Amherst, February 2020. I helped with creating some of the problems, writing the solutions, proctoring, and grading.
 - Panelist, "*Panel discussion: how to apply for academic jobs in math*", September 2019.
 - Jacob-Cohen-Killam competition, University of Massachusetts Amherst, March 2019. I helped with creating some of the problems and with grading.
- University of Georgia
 - I helped with hospitality and whiteboard maintenance for the "Georgia Algebraic Geometry Symposium", March 2017
 - I helped with hospitality for the UGA conferences "Georgia Summer Workshop in Algebraic Geometry" and "Topological Approaches to Algebra and Arithmetic Geometry", August, September 2016
 - Seminar talk, Professional Development Summer, UGA Math Department Bootcamp, "*Programming for mathematical research*", July 2016
 - Panelist, Professional Development, making the transition after qualifying exams, 2016
 - Panelist, Graduate Visitation Day, for prospective graduate students, 2016, 2017
 - Panelist, The Graduate Student Boot Camp, for first and second year graduate students, 2014

Referral and Reviewing

- Referee for AMS Book Program.
- Reviewer for *AMS Mathematical Reviews* (2019 – Present).

Programming Languages/Mathematics Software

C, Python/Mathematica, Porta, LRS, Macaulay2

Languages

- Italian, native language
- English, second language
- French, reading proficiency

Luogo e data:
Amherst, 10/06/2020

Dario SPIRITO

ESPERIENZE ACCADEMICHE

MARZO 2020–

Ricercatore a tempo determinato tipologia “A” in Algebra
Università degli Studi di Padova

LUGLIO 2017 – FEBBRAIO 2020

Assegno di ricerca in Algebra
Università degli Studi “Roma Tre”
Titolo: “Metodi topologici nella teoria degli anelli commutativi”

Abilitazione Scientifica Nazionale a professore di seconda fascia
Settore concorsuale MAT/02 – Geometria e Algebra
Valida dal 7 gennaio 2020 al 7 gennaio 2029

FORMAZIONE

- | | |
|-------------|--|
| GIUGNO 2016 | Dottorato di ricerca in MATEMATICA
Università degli Studi “Roma Tre”
Tesi: “Spaces of closure operations on rings and numerical semigroups”
Relatore: Prof. Marco FONTANA |
| LUGLIO 2012 | Laurea magistrale in MATEMATICA
Università degli Studi “Roma Tre”
110/110 e lode
Tesi: “Closure operations and star operations in commutative rings”
Relatore: Prof. Marco FONTANA |
| LUGLIO 2010 | Laurea in MATEMATICA
Università degli Studi “Roma Tre”
110/110 e lode |
| LUGLIO 2007 | Maturità scientifica
Liceo scientifico “Aristotele”, Roma
Voto: 100/100 e lode |

PUBBLICAZIONI

1. *Some topological considerations on semistar operations* (con Carmelo Finocchiaro), Journal of Algebra **409** (2014), 199–218.
2. *Star operations on numerical semigroups*, Communications in Algebra **43**(7) (2015), 2943–2963.
3. *Star operations on numerical semigroups: The multiplicity 3 case*, Semigroup Forum **91**(2) (2015), 476–494.

4. *New distinguished classes of spectral spaces: a survey* (con Carmelo Finocchiaro e Marco Fontana), in S. Chapman, M. Fontana, A. Geroldinger, B. Olberding (editor), *Multiplicative Ideal Theory and Factorization Theory: Commutative and Non-Commutative Perspectives*, Capitolo 5 (2016).
5. *Spectral spaces of semistar operations* (con Carmelo Finocchiaro e Marco Fontana), *Journal of Pure and Applied Algebra* **220**(8) (2016), 2897–2913.
6. *A topological version of Hilbert’s Nullstellensatz* (con Carmelo Finocchiaro e Marco Fontana), *Journal of Algebra* **461** (2016), 25–41.
7. *Topology, intersections and flat modules* (con Carmelo Finocchiaro), *Proceedings of the American Mathematical Society* **144**(10) (2016), 4125–4133.
8. *Star operations on numerical semigroups: antichains and explicit results*, *Journal of Commutative Algebra* **11**(3) (2019), 401–431.
9. *Jaffard families and localizations of star operations*, *Journal of Commutative Algebra* **11**(2) (2019), 265–300.
10. *Topological properties of semigroup primes of a commutative ring* (con Carmelo Finocchiaro e Marco Fontana), *Beiträge zur Algebra und Geometrie* **58**(3) (2017), 453–476.
11. *Non-compact subsets of the Zariski space of an integral domain*, *Illinois Journal of Mathematics* **60**(3–4) (2017), 791–809.
12. *Towards a classification of stable semistar operations on a Prüfer domain*, *Communications in Algebra* **46**(4) (2018), 1831–1842.
13. *Embedding the set of non-divisorial ideals of a numerical semigroup into \mathbb{N}^n* , *Journal of Algebra and its Applications* **17**(11) (2018), 1850205.
14. *The upper Vietoris topology on the space of inverse-closed subsets of a spectral space and applications* (con Carmelo Finocchiaro e Marco Fontana), *Rocky Mountain Journal of Mathematics* **48**(5) (2018), 1551–1583.
15. *Calculating the density of solutions of equations related to the Pólya-Ostrowski group through Markov chains*, *Acta Arithmetica* **186**(4) (2018), 319–336.
16. *The sets of star and semistar operations on semilocal Prüfer domains*, *Journal of Commutative Algebra* (to appear).
17. *Topological properties of localizations, flat overrings and sublocalizations*, *Journal of Pure and Applied Algebra* **223**(3) (2019), 1322–1336.
18. *The Zariski topology on sets of semistar operations without finite-type assumptions*, *Journal of Algebra* **513** (2018), 27–49.
 - *Corrigendum to “The Zariski topology on sets of semistar operations without finite-type assumptions”*, *Journal of Algebra* (to appear).
19. *Star operations on Kunz domains*, *International Electronic Journal of Algebra* **25** (2019), 171–185.
20. *Vector subspaces of finite fields and star operations on pseudo-valuation domains*, *Finite Fields and Their Applications* **56** (2019), 17–30.

21. *When the Zariski space is a Noetherian space*, Illinois Journal of Mathematics **63**(2) (2019), 299–316.
22. *The number of star operations on numerical semigroups and on related integral domains*, in: Barucci V., Chapman S., D’Anna M., Fröberg R. (editor), *Numerical Semigroups*, Capitolo 17 (2020).
23. *When two principal star operations are the same*, in: Facchini A., Fontana M., Geroldinger A., Olberding B. (editor), *Advances in Rings, Modules and Factorizations. Rings and Factorizations 2018*, Capitolo 17 (2020).
24. *Topological properties of subsets of the Zariski space*, ALaNT 5 Proceedings (to appear).
25. *The Golomb topology on a Dedekind domain and the group of units of its quotients*, Topology and Its Applications **293** (2020), 107101.
26. *The Golomb topology of polynomial rings*, Quaestiones Mathematicae (to appear).
27. *An ultrapower analogue of the Kronecker function ring* (con Alan Loper), Fundamenta Mathematicae (to appear).
28. *The Zariski-Riemann space of valuation domains associated to pseudo-convergent sequences* (con Giulio Peruginelli), Transactions of the American Mathematical Society (to appear).
29. *Decomposition and classifications of length functions*, Forum Mathematicum (to appear).

Preprint:

1. *Wilf’s conjecture for numerical semigroups with large second generator* (arXiv: 1710.09245).
2. *Extending valuations to the field of rational functions using pseudo-monotone sequences* (con Giulio Peruginelli) (arXiv: 1905.02481).
3. *Suprema in spectral spaces and the constructible closure* (con Carmelo Finocchiaro) (arXiv: 1906.07053).
4. *Multiplicative closure operations on ring extensions* (arXiv: 1910.13869).
5. *The Golomb space is topologically rigid* (con Taras Banakh e Sławomir Turek) (arXiv: 1912.01994).
6. *Radicals of principal ideals and the class group of a Dedekind domain* (arXiv: 2002.07556).

CONFERENZE

AMS Sectional Meeting, Special Session on Closure Operations in Commutative Algebra (Invited Speaker)

Georgetown University, 8–9 marzo 2015

Semistar operations and topology

Giornate di Geometria Algebrica ed argomenti correlati (Invited Speaker)

Università di Catania, 25–28 maggio 2016

Proprietà topologiche di insiemi di sovraanelli

Recent Advances in Commutative ring and Module Theory

Bressanone, 14–17 giugno 2016

Topological properties of sets of overrings of an integral domain

International Meeting on Numerical Semigroups with Applications (Invited Speaker)

Levico Terme, 4–8 luglio 2016

Star operations on numerical semigroups

Meeting of the Catalan, Spanish, Swedish Math Societies, Session on Numerical Semigroups and Applications (Invited Speaker)

Umeå, 12–15 giugno 2017

Star operations and shapes of the set of non-divisorial ideals

Conference on Rings and Factorizations

Graz, 19–23 febbraio 2018

Jaffard families and extension of star operations

ALaNT 5 – Joint Conferences on Algebra, Logic and Number Theory

Będlewo, 24–29 giugno 2018

Topological properties of subsets of the Zariski space

International Meeting on Numerical Semigroups with Applications (Invited Speaker)

Cortona, 3–7 settembre 2018

Star operations on numerical semigroups

SEMINARI

Università degli Studi “Roma Tre”, 6 maggio 2013

Operazioni star su semigruppri numerici

Università degli Studi “Roma Tre”, 3 giugno 2014

Operazioni semistar spettrali ed eab: analogie e differenze

City University of New York, 13 febbraio 2015

The Zariski topology on sets of semistar operations

George Mason University, 27 febbraio 2015

The Zariski topology on sets of semistar operations

Università di Padova, 21 novembre 2017

Estensioni di operazioni star e famiglie di Jaffard

Università di Padova, 11 luglio 2018

Decomposition and classification of length functions

Ohio State University, 15 ottobre 2018

The sets of star and semistar operations on a Prüfer domain

Università di Padova, 4 dicembre 2018

Sottoinsiemi non compatti dello spazio di Zariski

ATTIVITÀ PROFESSIONALI

Referee per le seguenti riviste:

Communications in Algebra, International Electronic Journal of Algebra, Journal of Algebra and Its Applications, Journal of Commutative Algebra, Matematicki Vesnik, Rocky

Mountain Journal of Mathematics, Rendiconti del Circolo Matematico di Palermo, Portugaliae Mathematica, Journal of Pure and Applied Algebra, Topology and its Applications.

Reviewer per Mathematical Reviews.

Proofreading per il libro *Rings, Modules and Closure Operations* di Jesse Elliott, edito da Springer.

RICONOSCIMENTI

- 2011 Borsa di studio INDAM per l'avviamento alla ricerca
- 2007 Borsa di studio INDAM per la laurea triennale, rinnovata per gli anni successivi al primo
- 2007 Medaglia d'oro alla fase nazionale delle Olimpiadi di Matematica

DIDATTICA

- 2020 Algebra lineare e geometria, canale 5
Co-titolare (32 CFU su 96)
Dipartimento di Ingegneria dell'Informazione, Università di Padova
Anno accademico 2019/2020
- 2019 Corso avanzato di algebra commutativa noetheriana e omologica
Corso di dottorato
Dipartimento di Matematica e Fisica, Università di Roma Tre
Anno accademico 2018/2019

Esercitazioni

- 2019 Esercitazioni per il corso di AL210 – Algebra 2
prof. Francesca Tartarone
Dipartimento di Matematica e Fisica, Università di Roma Tre
Anno accademico 2019/2020
- 2017 Esercitazioni per il corso di AL210 – Algebra 2
prof. Stefania Gabelli
Dipartimento di Matematica e Fisica, Università di Roma Tre
Anno accademico 2017/2018
- 2016 Esercitazioni per il corso di AL210 – Algebra 2
prof. Stefania Gabelli
Dipartimento di Matematica e Fisica, Università di Roma Tre
Anno accademico 2016/2017
- 2016 Esercitazioni per il corso di AL310 – Istituzioni di Algebra Superiore
prof. Stefania Gabelli
Dipartimento di Matematica e Fisica, Università di Roma Tre
Anno accademico 2015/2016
- 2012 Tutore per il corso di AC310 – Analisi complessa
prof. Edoardo Sernesi
Dipartimento di Matematica, Università di Roma Tre
Anno accademico 2011/2012
- 2010 Tutore per il corso di AC310 – Analisi complessa
prof. Lucia Caporaso
Dipartimento di Matematica, Università di Roma Tre
Anno accademico 2010/2011

2010 Tutore per il corso di TE1 – Teoria delle equazioni e teoria di Galois
prof. Francesco Pappalardi
Dipartimento di Matematica, Università di Roma Tre
Anno accademico 2009/2010

SOGGIORNI DI RICERCA

Settembre 2014–marzo 2015: attività di ricerca presso la George Mason University (Fairfax, Virginia), in collaborazione con il prof. Neil Epstein

Curriculum Vitae Stella Salvatore

Ultimo aggiornamento: 6 giugno 2020

Informazioni Generali:

Posizione attuale : RDT-a, Dipartimento di Matematica “G. Castelnuovo”, Università di Roma “La Sapienza”

E-mail: stella@mat.uniroma1.it

Homepage: <http://www1.mat.uniroma1.it/people/stella/>

Precedenti posizioni e Visite di ricerca:

- *13 marzo 2019 – 31 dicembre 2019:* Lecturer in Mathematics, Department of Mathematics, University of Leicester, UK
- *1 giugno 2017 – 12 marzo 2019:* Postdoc, Department of Mathematics & Department of Computer Science, University of Haifa, Haifa, Mount Carmel 31905, Israel
- *1 giugno 2015 – 31 maggio 2017:* INdAM - Marie Curie cofund fellow, Dipartimento di Matematica “G. Castelnuovo”, Università degli studi di Roma “Sapienza”
- *12 ottobre 2015 – 18 dicembre 2015:* Grey College Math Fellow, Department of Mathematical Sciences, Durham University
- *16 agosto 2013 – 31 maggio 2015:* Post Doctoral Research Scholar, North Carolina State University
- *20 agosto 2012 – 20 dicembre 2012:* Program Associate, Cluster Algebras Program, MSRI, Berkeley
- *1 settembre 2008 – 3 maggio 2013:* Research/Teaching Assistant, Northeastern University, Boston

Studi:

- Abilitazione Scientifica Nazionale: professore di seconda fascia, SC 01/A2 Geometria e Algebra, 18/09/2018
- Qualifié aux fonctions de maître de conférences, 25-Mathématiques, No. 17225302330, 02/02/2017
- *2008 – 2013:* Ph.D. in Mathematics, Northeastern University, Boston
Relatore: Prof. Andrei Zelevinsky
Tesi (5 aprile 2013): “Discrete structures in finite type Cluster Algebras”
- *2006 – 2008:* Laurea Specialistica in Matematica, Università degli studi di Roma “Sapienza”, con lode
- *2003 – 2006:* Laurea Triennale in Matematica, Università degli studi di Roma “Sapienza”, con lode
- *1998 – 2003:* Maturità Scientifica, Liceo “A. Righi”, Roma, 100/100

Premi:

- *2011:* Ling Ma fellowship, Northeastern University, Boston
- *2008 – 2013:* Excellence Fellowship, Northeastern University, Boston
- *1999, 2003, 2009:* Premio di studio della BCC di Formello
- *1998 – 2009:* Borsa di studio ANDSAI

Grants:

- *2020 - 2024:* Agence nationale de la recherche, Appel à projets générique 2019 – ANR PRC 2019 – Progetto di ricerca “Clusters, Homological Algebra, Representations and Mirror Symmetry” – PI: Yann Palu
- *agosto 2018:* Principal Investigator – Progetto di ricerca “Kac-Moody groups and cluster algebras” – INdAM starting grant – (1 postdoc to be hired for 1 year and research funds; renounced)
- *giugno 2015 – maggio 2017:* INdAM - Marie Curie cofund fellowship – (research funds)

Pubblicazioni:

- (14) [Con N. Reading] “The action of a Coxeter element on an affine root system”, Proceedings of the AMS Vol. 148, Issue 7 (2020), pp. 2783-2798, [arXiv:1808.05090](https://arxiv.org/abs/1808.05090); <https://doi.org/10.1090/proc/14769>
- (10) [Con N. Reading] “An affine almost positive roots model”, Journal of Combinatorial Algebra Vol 4 (2020) no. 1 pp. 1–59, [arXiv:1707.00340](https://arxiv.org/abs/1707.00340); <https://doi.org/10.4171/jca/37>
- (12) [Con D. Rupel] “Some consequences of categorification”, SIGMA 16 (2020), 007, 8 pages; [arXiv:1712.08478](https://arxiv.org/abs/1712.08478); <https://doi.org/10.3842/SIGMA.2020.007>
- (13) [Con D. Rupel, H. Williams] “Affine cluster monomials are generalized minors”, Compositio Mathematica

- Vol. 155, Issue 7 July 2019, pp. 1301-1326; [arXiv:1712.09143](https://arxiv.org/abs/1712.09143); <http://dx.doi.org/10.1112/S0010437X19007292>
- (11) [Con V. Pilaud, P.-G. Plamondon] “A τ -tilting approach to dissections of polygons”, SIGMA 14 (2018), 045, 8 pages; [arXiv:1710.02119](https://arxiv.org/abs/1710.02119); <https://doi.org/10.3842/SIGMA.2018.045>
 - (8) [Con D. Rupel, H. Williams] “On generalized minors and quiver representations”, International Mathematics Research Notices, rny053, (2018), [arXiv:1606.03440](https://arxiv.org/abs/1606.03440); <https://doi.org/10.1093/imrn/rny053>
 - (9) [Con C. Hohlweg, V. Pilaud] “Polytopal realizations of finite type g-vector fans”, Advances in Mathematics, Vol. 328, (2018), 713-749, [arXiv:1703.09551](https://arxiv.org/abs/1703.09551); <https://doi.org/10.1016/j.aim.2018.01.019>
 - (4) [Con N. Reading] “Initial-seed recursions and dualities for d-vectors”, Pacific Journal of Mathematics, Vol. 293 (2018), No. 1, 179–206, [arXiv:1409.4723](https://arxiv.org/abs/1409.4723); <https://doi.org/10.2140/pjm.2018.293.179>
 - (6) [Con L. Demonet, P. Plamondon, D. Rupel, P. Tumarkin] “ SL_2 -tilings do not exist in higher dimensions (mostly)”, Séminaire Lotharingien de Combinatoire, B76d (2018), 6 pp; [arXiv:1604.02491](https://arxiv.org/abs/1604.02491); <https://www.mat.univie.ac.at/~slc/wpapers/s76stella.html>
 - (5) [Con M. Cheung, M. Gross, G. Muller, G. Musiker, D. Rupel, H. Williams] “The greedy basis equals the theta basis”, Journal of Combinatorial Theory, Series A, Volume 145, January 2017, Pages 150–171; [arXiv:1508.01404](https://arxiv.org/abs/1508.01404); <http://dx.doi.org/10.1016/j.jcta.2016.08.004>
 - (7) [Con P. Tumarkin] “Exchange relations for finite type cluster algebras with acyclic initial seed and principal coefficients”, SIGMA 12 (2016), 067, 9 pages; [arXiv:1604.06286](https://arxiv.org/abs/1604.06286); <http://dx.doi.org/10.3842/SIGMA.2016.067>
 - (3) [Con T. Nakanishi] “Wonder of sine-Gordon Y -systems”, Transactions of the AMS, 368 (2016), 6835-6886; [arXiv:1212.6853](https://arxiv.org/abs/1212.6853); <http://dx.doi.org/10.1090/tran/6505>
 - (2) [Con T. Nakanishi] “Diagrammatic description of c-vectors and d-vectors of cluster algebras of finite type”, Electronic journal of Combinatorics Volume 21, Issue 1 (2014) P1.3; [arXiv:1210.6299](https://arxiv.org/abs/1210.6299); <http://www.combinatorics.org/ojs/index.php/eljc/article/view/v21i1p3>
 - (1) “Polyhedral models for generalized associahedra via Coxeter elements”, Journal of Algebraic Combinatorics 38 (2013), no. 1, 121–158; [arXiv:1111.1657](https://arxiv.org/abs/1111.1657); <http://dx.doi.org/10.1007/s10801-012-0396-7>

Preprints:

- (15) [Con A. Chandler, R. Sazdanovic, M. Yip] “On the Strength of Chromatic Symmetric Homology for graphs”, [arXiv:1911.13297](https://arxiv.org/abs/1911.13297)

Insegnamento:

- *Primavera 2020*: “Gruppi di Coxeter - Percorso di Eccellenza - Matematica”, Università “La Sapienza”
- *Primavera 2020*: “Istituzioni di Matematica II - Chimica”, Università “La Sapienza”
- *2019 – 2020*: “MMath Project”, University of Leicester
- *Autunno 2019*: “Investigations in Maths”, University of Leicester
- *Primavera 2015*: “Introduction to cluster algebras” (Corso di dottorato), North Carolina State University
- *Autunno 2014*: Due sezioni di “Calculus 1”, North Carolina State University
- *Primavera 2014*: “Linear Algebra”, North Carolina State University
- *Autunno 2013*: Due sezioni di “Calculus 1”, North Carolina State University
- *Primavera 2011*: “Discrete mathematics”, Northeastern University
- *Autunno 2010*: “Calculus 2”, Northeastern University
- *Primavera 2009*: “Calculus for business and economics”, Northeastern University
- *Autunno 2008*: “Recitation for Calculus 3”, Northeastern University

Organizzatore di:

- *Autunno 2019*: Pure Math Seminar, University of Leicester
- *dicembre 2018*: Conference “Cluster structures in geometry, physics, combinatorics and representation theory”, Notre Dame University Global Gateway, Jerusalem
- *ottobre 2016*: Workshop “Lie theory and cluster algebras”, Notre Dame University Global Gateway, Rome
- *giugno 2015*: Workshop “Sage Days 64.5”, IMA, Twin Cities, Minnesota
- *2014 – 2015*: “Algebra and Combinatorics seminar”, North Carolina State University
- *Primavera 2013*: “Brandeis-Northeastern joint seminar on cluster algebras”, Boston
- *Autunno 2011*: “MIT-Northeastern University joint seminar on cluster algebras” Boston

Referee per:

- Journal of Algebra
- Transactions of the AMS
- Memoirs of the AMS
- International Mathematics Research Notices (IMRN)
- Mathematische Zeitschrift
- Pacific Journal of Mathematics
- Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)
- Formal Power Series and Algebraic Combinatorics (FPSAC)
- Journal of Combinatorial Theory, Series A
- Journal of Algebraic Combinatorics
- Algebras and Representation Theory
- Bulletin of the London Mathematical Society
- Canadian Journal of Mathematics
- Canadian Mathematical Bulletin
- SageMath

Principali seminari e conferenze su invito:

- *giugno 2020*: Seminario ARTS, Università di Roma “Tor Vergata”
- *settembre 2019*: Congresso UMI: sezione di Combinatoria
- *settembre 2019*: Congresso UMI: sezione di Teoria di Lie
- *giugno 2019*: Conference: Cluster Algebras, RIMS, Kyoto
- *maggio 2019*: Conference: Representation Theory and Homological Mirror Symmetry, Leicester University
- *luglio 2018*: Conference: FPSAC
- *febbraio 2018*: Colloque tournant du GDR Théorie de Lie 2018
- *novembre 2017*: Conference: Two Cluster Days in Paris, IHP
- *ottobre 2017*: Plateau Saclay Combinatorics Seminar, École Polytechnique
- *giugno 2017*: Workshop: Algebraic and Geometric Combinatorics of Reflection Groups, Montreal
- *maggio 2017*: Workshop: Quinto incontro di combinatoria dei sistemi di radici, Cortona
- *aprile 2017*: Oberseminar, Universität Köln
- *gennaio 2017*: Algebra Seminar, University of Haifa
- *novembre 2016*: Algèbre et Géométrie seminar, LMNO, Université de Caen
- *novembre 2016*: Séminaire Quantique, IRMA, Strasbourg
- *novembre 2016*: Oberseminar Darstellungstheorie, Universität Bonn
- *giugno 2016*: Yau Mathematical Sciences Center, Tsinghua University, Beijing
- *aprile 2016*: Séminaire Philippe Flajolet, IHP
- *aprile 2016*: Séminaire Lotharingien de Combinatoire 76
- *dicembre 2015*: Algebraic combinatoric session, CMS winter meeting, Montreal
- *ottobre 2015*: Colloquium, Department of Mathematics, Durham university
- *gennaio 2015*: MRC special section, AMS Joint Meeting, San Antonio
- *dicembre 2014*: Séminaire du LaCIM, UQAM, Montreal
- *novembre 2014*: Workshop on Cluster algebras and Representation theory, KIAS, Seoul
- *ottobre 2014*: Applied Algebra Seminar, Toronto
- *ottobre 2014*: Generalized Catalan Algebraic Combinatorics, AMS sectional meeting, Halifax
- *settembre 2014*: Seminario di algebra e geometria, Università di Roma “Sapienza”
- *maggio 2014*: Workshop on Hall and cluster algebras, CRM (Montreal)
- *maggio 2013*: 6th Southeastern Lie Theory Workshop
- *aprile 2013*: Maurice Auslander International Conference
- *aprile 2013*: AMS Sectional Meeting, Special Session on Cluster Algebras and Related Combinatorics

Amos Turchet

EMPLOYMENT

- 2019 – Junior Visitor, Scuola Normale Superiore di Pisa
- 2016 – 2019 Acting Assistant Professor, University of Washington
- 2014 – 2016 Postdoctoral Researcher, Chalmers University of Technology

VISITING APPOINTMENTS

- 2013 Academic guest, Rational Points, Rational Curves and Entire Holomorphic Curves on Algebraic Varieties, Centre de recherches mathématiques, Montréal
- 2012 – 2013 Visiting Researcher, Brown University,
Advisors: Prof.s Dan Abramovich and Joseph Silverman

EDUCATION

- 2014 Ph.D. Mathematics, Università degli studi di Udine (advisor: Pietro Corvaja)
- 2010 M.S. Mathematics, Università degli studi di Udine, cum laude
- 2007 B.S. Mathematics, Università degli studi di Udine, cum laude
- 2007 Classical Guitar Diploma, Conservatorio A. Boito di Parma, 10/10

RESEARCH INTERESTS

Arithmetic and Algebraic Geometry, Number Theory

AWARDS AND GRANTS

- 2019 Qualification for Maître de conférences
- 2018 Nominee, University of Washington Postdoc Mentoring Award
- 2017 Grant for “Where Geometry meets Number Theory, a conference for 60th birthday of P. Salberger” : 110.000 SEK (Gothenburg Center for Advanced Studies GoCAS) and 93.000 SEK (Swedish Research Council)
- 2016 Grant for “Number Theory Days 5” : 25.000 SEK (GoCAS)
- 2015 Grant for “Number Theory Days 3” : 35.000 SEK (GoCAS)
- 2014 Knut and Alice Wallenberg Foundation Travel grant
- 2011 – 2014 MIUR Ph.D. Scholarship
- 2003 – 2008 Scholarship for Academic Merit, Magnano in Riviera, UD

PUBLICATIONS

IN JOURNALS AND VOLUMES

1. Fibered Threefolds and Lang-Vojta's Conjecture over Function Fields.
Transactions of the American Mathematical Society **369** (2017), no.12, 8537-8558
doi: 10.1090/tran/6968
2. A fibered power theorem for pairs of log general type. (with K. Ascher.) *Algebra and Number Theory* **10** (2016), no. 7, 1581–1600. doi: 10.2140/ant.2016.10.1581
3. Invitation to Integral and Rational points on curves and surfaces. (with P. Das.) *Rational Points, Rational Curves, and Entire Holomorphic Curves on Projective Varieties*, Contemporary Mathematics, vol. 654, Amer. Math. Soc., Providence, RI, 2015, pp. 53-73. doi: 10.1090/conm/654/13215
4. The Erdős–Ulam problem, Lang's Conjecture, and uniformity. (with K. Ascher and L. Braune) – to appear in *Bulletin of the London Mathematical Society*.

SUBMITTED FOR PUBLICATION

5. Hyperbolicity And Uniformity Of Varieties Of Log General Type. (with K. Ascher and K. DeVleming.) – accepted in IMRN pending minor revisions.
6. Lang-Vojta Conjecture over function fields for surfaces dominating \mathbb{G}_m^2 . (with L. Capuano.) – submitted.
7. Nonspecial varieties and Generalized Lang-Vojta conjectures. (with E. Rousseau and J.T.-Y. Wang) – submitted

IN PREPARATION

8. Geometric Lang-Vojta Conjecture in \mathbb{P}^2 . (with K. Ascher and M. Talpo.) – in preparation.
9. GCD results on semiabelian varieties and a Conjecture of Silverman (with F. Barroero and L. Capuano) – in preparation.

OTHER PUBLICATIONS

10. Hyperbolicity of varieties of log general type.
to appear as chapter in *Arithmetic Geometry of Logarithmic Pairs and Hyperbolicity of Moduli Spaces*, CRM-Springer Short Courses Series – 2020
11. Geometric Lang-Vojta Conjecture in the projective plane. Ph.D. Thesis, 2014;

LECTURE SERIES

- 2019 School (and Workshop) on Diophantine geometry and special varieties
Trento, September 2019, Supporting lecturer
- 2018 Geometry and arithmetic of orbifolds, Montréal December 2018
Title: *Arithmetic and Geometry of log pairs* (w. Kenny Ascher - 4 lectures)

SEMINARS AND CONFERENCES AS SPEAKER

- 2020 Minisymposium "Number Theory" within the 8ECM (Covid postponed)
- 2019 University of Freiburg, Seminar: Algebra, Zahlentheorie und algebraische Geometrie
Summer program on complex geometry and several complex variables, Shanghai Center
for Mathematical Sciences
Université Paris-Sud, Audition pour MDC
Diophantine Approximation and Value Distribution Theory at the interface of Arithmetic
and Complex Hyperbolic Geometry. UQAM, Montréal
Hawaii Number Theory 2019 conference (HINT 2019)
Arithmetic Geometry Session
Greater Vancouver Number Theory Day, UBC, Vancouver
- 2018 Canadian Math Society Winter Meeting, Vancouver
Recent Advances in Arithmetic and Hyperbolic Geometry
University of Oxford, Arithmetic Geometry Seminar
Spring Eastern Sectional AMS Meeting, Portland University
Special Session on Algebraic Geometry and its Connections
University of Oxford, Algebraic Geometry Seminar
- 2017 Banff International Research Station, Diophantine Approximation and Algebraic Curves
UBC, Algebraic Geometry Seminar
- 2016 University of Oregon, Number Theory Seminar
University of Washington, Number Theory Seminar
University of Washington, Algebra and Algebraic Geometry Seminar
KTH, Seminar Algebra and Geometry
Aix Marseille Université, Séminaire Géométrie, Dynamique et Topologie
Universität Bayreuth, Algebraic Geometry Seminar
Johannes Gutenberg University Mainz, SFB-Kolloquium
- 2015 Terzo Incontro Italiano di Teoria dei Numeri, Centro de Giorgi Pisa
Quantitative arithmetic geometry, Mittag-Leffler Institute
 \mathbb{N}^3 -days 2, University of Copenhagen
Chalmers University of Technology, Algebraic Geometry Seminar
- 2014 Universität Basel, Seminar Algebra and Geometry
Banff International Research Station, Vojta's Conjectures
Chalmers University of Technology, Number Theory Seminar
Intercity workshop in Arakelov Theory, "Sapienza" Università di Roma
On Lang and Vojta's conjectures, CIRM Marseille
- 2013 TULSF VIII (A meeting in Algebraic Geometry), Ljubljana University
Brown University, Junior Arithmetic and Algebraic Geometry Seminars
- 2012 Moduli of Curves and Gromov-Witten Theory, Institut Fourier

SELECTED CONFERENCES AS A PARTICIPANT

- 2019 Topics in Rational and Integral Points, Universität Basel
Birational Geometry and Hodge Theory – Entire Curves, Rational Curves and Foliation, CIRM Marseille
- 2018 International summer school on Arithmetic geometry, Università degli Studi di Salerno
Workshop on effectivity and ineffectivity for unlikely intersections, University of Manchester
- 2017 Western Algebraic Geometry Symposium, Fall 2017, UCLA
Specialization problems in Diophantine Geometry, Cetraro
Western Algebraic Geometry Symposium, Spring 2017, UBC
Banff International Research Station, Newton-Okunkov Bodies, Test Configurations, and Diophantine Geometry
- 2016 \mathbb{N}^3 -days 4, University of Copenhagen
- 2015 Banff International Research Station, Distribution of Rational and Holomorphic Curves in Algebraic Varieties
2015 Summer Research Institute on Algebraic Geometry, University of Utah
Final ERC meeting in Diophantine Geometry, Accademia dei Lincei
- 2014 \mathbb{N}^3 -days 1, University of Copenhagen
Second ERC Research Period on Diophantine Geometry, Cetraro
Géométrie Algébrique en Liberté, SISSA
- 2011 School and Conference on Modular Forms and Mock Modular Forms and their applications in Arithmetic, Geometry and Physics, ICTP

TEACHING

UNIVERSITY OF WASHINGTON, Professor

- 2019 Spring Math 308 H: Matrix Algebra (Linear Algebra)
Winter Math 340 G: Abstract Linear Algebra
- 2018 Fall Math 308 C: Matrix Algebra (Linear Algebra)
Math 308 D: Matrix Algebra (Linear Algebra)
Spring Math 308 B: Matrix Algebra (Linear Algebra)
Winter Math 582 G: Diophantine Geometry of Curves (Graduate Course)
Math 308 D: Matrix Algebra (Linear Algebra)
- 2017 Fall Math 402: Introduction to Modern Algebra I (Group Theory)
Spring Math 308 G: Matrix Algebra (Linear Algebra)
Winter Math 308 A: Matrix Algebra (Linear Algebra)
Math 308 D: Matrix Algebra (Linear Algebra)
- 2016 Fall Math 308 G: Matrix Algebra (Linear Algebra)

UNIVERSITY OF WASHINGTON, Reading courses

- 2018 Arithmetic of Elliptic Curves (1 graduate student)
Uniformity of Rational points (4 undergraduate students)
- 2017 Diophantine Equations (4 undergraduate students)
Primality Tests and Elliptic Curves (4 undergraduate students)
Primality Tests and the AKS Theorem (4 undergraduate students)

CHALMERS UNIVERSITY OF TECHNOLOGY, Professor

2015 Scheme Theory (Graduate Course)

CHALMERS UNIVERSITY OF TECHNOLOGY, Teaching assistant

2015 MVE085: Multivariable Calculus

MVE016: Calculus II

2014 MVE085: Multivariable Calculus

UNIVERSITÀ DEGLI STUDI DI UDINE, Teaching assistant

2013 – 2014 Matematica Discreta per Informatica (Combinatorics, arithmetic and linear algebra)

2012 – 2013 Matematica Discreta per Informatica

2011 – 2012 Matematica Discreta per Informatica

Matematica per Architettura (Multivariable calculus and linear algebra)

2010 – 2011 Matematica per Architettura

CONFERENCE ORGANIZATION**ORGANIZER**

2019 AMS Joint Central and Western Sectional Meeting:
Special session on “Arithmetic Geometry and its connections”
Co-organizer: L. Capuano

2017 Where Geometry meets Number Theory, a conference for 60th birthday of P. Salberger
Co-organizer: J. Brandes, T. Browning, O. Marmon

2016 \mathbb{N}^3 -days 5 at Chalmers University
Co-organizers: J. Brandes, D. Eriksson, P. Salberger, M. Westerholt-Raum

2015 \mathbb{N}^3 -days 3 at Chalmers University
Co-organizer: D. Eriksson, P. Salberger, M. Westerholt-Raum

2011 9th Metaheuristics International Conference (Local Organizer)

ADVISING**THESIS SUPERVISED**

2016 Stepan Maximov, Trang Nguyen, Robin Sorsa Sigurdson, Olivia Stalin
Chalmers University of Technology - Undergraduate thesis:
“Primality Tests and the AKS primality test”

RESEARCH PROJECTS FOR UNDERGRADUATES

2018 Washington Experimental Mathematical Lab: Uniformity of Diophantine Equations

2017 Washington Experimental Mathematical Lab: Elliptic Curves and Primality Tests

Washington Experimental Mathematical Lab: The AKS Primality Test

OUTREACH

- 2018 Lecturer, Math Day - University of Washington
- 2017 Lecturer, Math Day - University of Washington

SERVICE

DEPARTMENTAL SERVICE

- 2018 Leading Acting Assistant Professor (guidance for new postdocs)
- 2014 – 2016 Chalmers University of Technology: Organizer of the Algebraic Geometry and Number Theory Seminar

COMMUNITY SERVICE

- Referee for IMRN, Journal of Pure and Applied Algebra, Periodica Mathematica Hungarica, Mathematica Scandinava
- Reviewer for Zentralblatt MATH
- Member of the American Mathematical Society

CURRICULUM VITAE DI DANIELE VALERI

Posizione attuale

Lecturer in Matematica all'Università di Glasgow.

Posizioni precedenti

- | | |
|-----------------------------|--|
| Ottobre 2017-Agosto 2018 | Assistant Professor presso lo Yau Mathematical Sciences Center (YMSC), Tsinghua University, Pechino. |
| Ottobre 2014-Settembre 2017 | Assegnista di ricerca presso lo Yau Mathematical Sciences Center (YMSC), Tsinghua University, Pechino. |
| Ottobre 2012-Settembre 2014 | Assegnista di ricerca presso la Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste. |

Visite accademiche

- | | |
|-----------------------------|---|
| Giugno 2019 | In visita presso l'IHES, Bures-sur-Yvette. |
| Dicembre 2017-Febbraio 2018 | In visita presso l'Università di Roma La Sapienza. |
| Giugno-Luglio 2017 | In visita presso l'IHES, Bures-sur-Yvette. |
| Dicembre 2016-Febbraio 2017 | In visita presso l'Università di Roma La Sapienza. |
| Luglio 2016 | In visita presso la SISSA, Trieste. |
| Maggio 2016 | Visiting scholar presso University of Sydney, Australia. |
| Dicembre 2015-Febbraio 2016 | In visita presso l'Università di Roma La Sapienza. |
| Aprile-Maggio 2014 | In visita presso il Mathematisches Forschungsinstitut Oberwolfach. |
| Ottobre 2012 | In visita presso l'IHES, Bures-sur-Yvette. |
| Autunno 2011 | Visiting student presso il Massachusetts Institute of Technology (MIT), Cambridge (MA). |
| Primavera 2011 | Visiting student presso il Massachusetts Institute of Technology (MIT), Cambridge (MA). |
| Primavera 2010 | Visiting student presso il Massachusetts Institute of Technology (MIT), Cambridge (MA). |

Titoli di studio

- | | |
|-------------|---|
| Marzo 2012 | Dottorato di ricerca in matematica.
Sapienza Università di Roma.
Titolo della tesi: Classical \mathcal{W} -algebras. Relatore: prof. Alberto De Sole. |
| Luglio 2008 | Laurea specialistica in matematica, votazione 110/110 con lode.
Sapienza Università di Roma.
Titolo della tesi: "Estensioni ciclotomiche: parità del numero di classe".
Relatore: prof.ssa Marialuisa J. de Resmini. |
| Luglio 2006 | Laurea triennale in matematica, votazione 110/110 con lode.
Università degli studi di Roma "La Sapienza".
Titolo della tesi: Sui T-gruppi. Relatore: prof.ssa Marialuisa J. de Resmini. |

Abilitazioni

Abilitazione Scientifica Nazionale a Professore Associato - Settore concorsuale 01/A2 Geometria e Algebra, dal 31/07/2017 al 31/07/2023.

Abilitazione Scientifica Nazionale a Professore Associato - Settore concorsuale 01/A4 Fisica Matematica dal 13/07/2018 al 13/07/2024.

Pubblicazioni e preprints

- Valeri D., *W-algebras via Lax type operators*, [arXiv:2001.05751 \[math-ph\]](#).
- Carpentier S., De Sole A., Kac V.G., Valeri D., van de Leur J., *\underline{p} -reduced multicomponent KP hierarchy and classical \mathcal{W} -algebras $\mathcal{W}(\mathfrak{gl}_N, \underline{p})$* , [arXiv:1909.03301 \[math-ph\]](#).
- De Sole A., Kac V.G., Valeri D., Wakimoto M., *Poisson λ -brackets for differential-difference equations*, [arXiv:1806.05536 \[math.RT\]](#).
- De Sole A., Fedele L., Valeri D., *Generators of the quantum finite W-algebras in type A*, accettato in Journal of Algebra and Its Applications, [arXiv:1806.03233 \[math.RT\]](#).
- De Sole A., Kac V.G., Valeri D., Wakimoto M., *Local and non-local multiplicative Poisson vertex algebras and differential-difference equations*, Comm. Math. Phys. **370** (2019), no. 3, 1019-1068.
- Genovese G., Lucà R., Valeri D., *Invariant measures for the periodic derivative nonlinear Schrödinger equation*, Math. Ann. **374** (2019), no. 3-4, 1075-1138.
- De Sole A., Kac V.G., Valeri D., *A Lax type operator for quantum finite W-algebras*, Sel. Math. New Ser. **24** (2018), no. 5, 4617-4657.
- Casati M., Valeri D., *MasterPVA and WAlg: Mathematica packages for Poisson vertex algebras and classical affine \mathcal{W} -algebras*, Boll. Unione Mat. Ital. **11** (2018), no. 4, 503-531.
- De Sole A., Kac V.G., Valeri D., *Classical affine \mathcal{W} -algebras and the associated integrable Hamiltonian hierarchies for classical Lie algebras*, Comm. Math. Phys. **360** (2018), no. 3, 851-918.
- De Sole A., Kac V.G., Valeri D., *Finite W-algebras for \mathfrak{gl}_N* , Adv. Math. **327** (2018), 173-224.
- Masoero D., Raimondo A., Valeri D., *Bethe Ansatz and the Spectral Theory of affine Lie algebra-valued connections II. The non simply-laced case*, Comm. Math. Phys. **349** (2017), n. 3, 1063-1105.
- De Sole A., Kac V.G., Valeri D., *Classical affine \mathcal{W} -algebras for \mathfrak{gl}_N and associated integrable Hamiltonian hierarchies*, Comm. Math. Phys. **348** (2016), n. 1, 265-319.
- De Sole A., Kac V.G., Valeri D., *A new scheme of integrability for (bi)Hamiltonian PDE*, Comm. Math. Phys. **347** (2016), n. 2, 449-488.
- De Sole A., Kac V.G., Valeri D., *Structure of classical (finite and affine) \mathcal{W} -algebras*, J. Eur. Math. Soc. **18** (2016), n. 9, 1873-1908.
- Genovese G., Lucà R., Valeri D., *Gibbs measures associated to the integrals of motion of the periodic derivative nonlinear Schrödinger equation*, Sel. Math. New Ser. **22** (2016), n. 3, 1663-1702.
- Masoero D., Raimondo A., Valeri D., *Bethe Ansatz and the Spectral Theory of affine Lie algebra-valued connections I. The simply-laced case*, Comm. Math. Phys. **344** (2016), n. 3, 719-750.
- De Sole A., Kac V.G., Valeri D., *Adler-Gelfand-Dickey approach to classical \mathcal{W} -algebras within the theory of Poisson vertex algebras*, Int. Math. Res. Not. **21** (2015), 11186-11235.
- De Sole A., Kac V.G., Valeri D., *Double Poisson vertex algebras and non-commutative Hamiltonian equations*, Adv. Math. **281** (2015), 1025-1099.
- De Sole A., Kac V.G., Valeri D., *Integrability of Dirac reduced bi-Hamiltonian equations*, Trends in Contemporary Mathematics, Springer INDAM Series, vol. 8 (2014), 13-32.
- De Sole A., Kac V.G., Valeri D., *Dirac reduction for Poisson vertex algebras*, Comm. Math. Phys. **331** (2014), n. 3, 1155-1190.
- De Sole A., Kac V.G., Valeri D., *Classical \mathcal{W} -algebras and generalized Drinfeld-Sokolov hierarchies for minimal and short nilpotents*, Comm. Math. Phys. **331** (2014), n. 2, 623-676. Erratum in Commun. Math. Phys. **333** (2015), n. 3, 1617-1619.

Valeri D., *Classical W -algebras within the theory of Poisson vertex algebras*, Advances in Lie Superalgebras, Springer INdAM series, vol. 7 (2013), 203-221.

De Sole A., Kac V.G., Valeri D., *Classical W -algebras and generalized Drinfeld-Sokolov bi-Hamiltonian systems within the theory of Poisson vertex algebras*, Comm. Math. Phys. **323** (2013), n. 2, 663-711.

Attività didattica

- Primavera 2020 *4H: Mathematical Physics*, University of Glasgow.
Autunno 2019 *Mathematics 2A: Multivariable Calculus*, University of Glasgow.
Primavera 2019 *4H: Mathematical Physics*, University of Glasgow.
Autunno 2018 *Mathematics 2A: Multivariable Calculus*, University of Glasgow.
Primavera 2018 *Linear algebra 2*, Tsinghua University.
Primavera 2017 *Infinite dimensional Lie algebras*, corso per il dottorato, YMSC.
Primavera 2016 *An introduction to vertex algebras*, corso per il dottorato, YMSC.
Autunno 2013 *Poisson vertex algebras and applications to integrable systems*, corso per il dottorato in Geometria e Fisica Matematica, SISSA.
Autunno 2010 Tutoraggio per il corso *Calcolo 1* del prof. Alessandro Figà Talamanca, Dipartimento di Ingegneria Elettronica, Università di Roma 3.
Primavera 2009 Tutoraggio per il corso *Analisi 1* del prof. Alessandro Figà Talamanca, Dipartimento di Matematica, Sapienza Università di Roma.

Attività di supervisione

Attualmente supervisore di due studenti di dottorato (Anna Clancy e Johan Wright) all'Università di Glasgow.

Supervisore di quattro tesi di master all'Università di Glasgow.

Preparazione degli studenti di Tsinghua University partecipanti allo "S. T. Yau College Mathematics Contest" (luglio 2018) nella sezione di "Algebra, Number theory and Combinatorics".

Supervisore della "Junior Thesis" di Meng Fei Xia (discussa il 10 giugno 2018) all'interno del progetto "Tsinghua University Talent Training Program".

Borse di studio e finanziamenti

"Research Fund for International Young Scientists" per il periodo 01/01/2016-31/12/2016 finanziato dalla National Natural Science Foundation of China (NSFC) per il progetto " W -algebras and applications" (Grant No. 11550110178).

Finanziamento di un anno (2014-2015) da parte dell'INdAM all'interno del "Progetto Giovani" per il progetto "ODE/IM Correspondence" in collaborazione con D. Masoero (Universidade de Lisboa) e A. Raimondo (Milano Bicocca).

Borsa di studio "Research in pairs" presso il Mathematisches Forschungsinstitut Oberwolfach per il progetto "Invariant measures for 1d DNLS" in collaborazione con G. Genovese (Zurich Universitat) e R. Lucà (ICMAT).

Seminari

University of Glasgow, Integrability, algebra and geometry, 13 dicembre 2019: *Newbie approach to classical R -matrices*.

University of York, Mathematical Physics Seminar, 17 ottobre 2019: *Classical W -algebras and reductions of KP hierarchy*.

Euler Institute, Saint Petersburg, Workshop on Classical and Quantum Integrable Systems, 24 luglio

2019, *Lax type operators for W -algebras*.

CRM Montréal, XIth International Symposium: Quantum Theory and Symmetries (Integrability Session), 5 luglio 2019: *Differential-difference equations and deformations of W -algebras*.

CRM Montréal, XIth International Symposium: Quantum Theory and Symmetries, 5 luglio 2019: *Algebraic structures arising from physics*.

Leeds University, Brackets, Reduction and Integrability, 18 maggio 2019: *Differential-difference equations and deformations of W -algebras*.

University of Kent, One day workshop on W -algebras, 30 Aprile 2019: *Differential-difference equations and deformations of W -algebras*.

University of Birmingham, Geometry and Mathematical Physics Seminar, 27 Marzo 2019: *Algebraic structures arising from physics*.

ICMS Edinburgh, EMPG Seminar, 20 Marzo 2019: *Differential-difference equations and deformations of W -algebras*.

Loughborough University, Integrable Day 2018, 30 Novembre 2018: *Lambda-brackets for differential-difference equations*.

University of Glasgow, ISMP Seminar, 9 ottobre 2018: *Algebraic structures arising from physics*.

SISSA, 3 maggio 2018: *Algebraic structures arising from physics*.

University of Edinburgh, MAXIMALS Seminar, 13 febbraio 2018: *Algebraic structures arising from physics*.

SISSA, Seminar in Integrable Systems, 12 luglio 2017: *Classical affine W -algebras associated to classical Lie algebras*.

Korea Institute for Advanced Studies (KIAS), Seoul, 17 aprile 2017: *ODE/IM correspondence for simple Lie algebras*.

Sun Yat-Sen University, Guangzhou, 24 marzo 2017: *W -algebras in type A* .

Università di Milano-Bicocca, 24 gennaio 2017: *Generalized Drinfeld-Sokolov hierarchies in type A* .

Sapienza Università di Roma, Seminario di Algebra e Geometria, 18 gennaio 2017: *Algebraic aspects of the ODE/IM correspondence*.

University of Melbourne, W -algebras Workshop, 28 novembre 2016: *Introduction to vertex algebras*.

YMSC, The 2nd YMSC Post-doc Workshop, 22 ottobre 2016: *ODE/IM correspondence and beyond*.

SISSA, Seminar on W -algebras and Integrable Systems, 29 luglio 2016: *Adler type pseudodifferential operators and generalized Drinfeld-Sokolov hierarchies in type A* .

SISSA, Seminar on W -algebras and Integrable Systems, 15 luglio 2016: *Classical W -algebras*.

University of Sydney, Algebra Seminar, 6 maggio 2016: *Classical W -algebras for \mathfrak{gl}_N and associated integrable hierarchies*.

Sapienza Università di Roma, Algebraic Geometry and Representation Theory in Rome, 22 dicembre, 2015: *Adler type pseudodifferential operators and integrable systems*.

YMSC, The YMSC Post-doc Workshop, 7 novembre 2015, *Adler type pseudodifferential operators and integrable systems*.

YMSC, Geometry and Physics Seminar (GPS), 27 ottobre 2015: *Classical W -algebras and generalized Drinfeld-Sokolov hierarchies*.

Centro di Ricerca Matematica E. De Giorgi, Pisa, Perspectives in Lie theory: Vertex algebras, W -algebras, and applications, 12 dicembre 2014: *Classical W -algebras and generalized Drinfeld-Sokolov hierarchies*.

Università di Milano-Bicocca, Workshop on Geometric and Analytic Aspects of Integrable and nearly-Integrable Hamiltonian Systems, 19 giugno 2014: *Structure of classical (finite and affine) W -algebras*.

SISSA, Integrable Systems and Mathematical Physics seminar, 2 aprile 2014: *Structure of classical W -algebras*.

ETH, Talks in Mathematical Physics, 12 dicembre 2013: *Classical \mathcal{W} -algebras and applications*.
 SISSA, Seminar in Integrable Systems, 10 aprile 2013: *Classical \mathcal{W} -algebras within the theory of Poisson vertex algebras II*.
 SISSA, Seminar in Integrable Systems, 16 gennaio 2013: *Classical \mathcal{W} -algebras within the theory of Poisson vertex algebras*.
 INDAM, Lie superalgebras conference, 11 dicembre 2012: *Classical \mathcal{W} -algebras within the theory of Poisson vertex algebras*.
 Sapienza Università di Roma, Seminario di Algebra e Geometria, 18 gennaio 2012: *Classical \mathcal{W} -algebras*.
 Sapienza Università di Roma, Seminario dottorandi, 8 e 15 giugno 2011: *Algebre di vertice di Poisson e equazioni Hamiltoniane*.
 Northeastern University, Graduate student seminar, 16 marzo 2011: *Poisson vertex algebras and Drinfeld-Sokolov Hamiltonian reduction*.

Attività organizzative e di referaggio

Organizzatore della conferenza *Integrability, algebra and geometry*, University of Glasgow, 13 dicembre 2019.
 Organizzatore del *56th ARTIN Meeting: Algebra and Representation Theory in the North*, University of Edinburgh, 28-29 novembre 2019.
 Organizzatore della conferenza *Integrable systems, special functions and combinatorics*, Sabhal Mòr Ostaig, Gaelic College, Isle of Skye, 23-28 giugno 2019.
 Organizzatore del seminario ISMP (Sistemi Integrabili e Fisica Matematica) all'Università di Glasgow per gli anni accademici 2018-2019 e 2019-2020.
 Referee e membro della commissione per la discussione della tesi di dottorato di Laura Fedele (con N. Cantarini e A. D'Andrea) all'Università di Roma La Sapienza, gennaio 2018.
 Organizzatore del convegno *Hamiltonian PDES, Frobenius manifolds and Deligne-Mumford moduli spaces*, SISSA, Trieste, 16-20 settembre 2013.
 Organizzatore del convegno *MJR: a conference in honour of Mariakuisa J. de Resmini*, Sapienza Università di Roma, 24-25 settembre 2009.
 Attività di refereggio scientifico per le riviste: Communications in Mathematical Physics, Indagationes Mathematicae, International Journal of Mathematics, IMRN, Journal of Algebra, Journal of Mathematical Physics, Journal of Noncommutative Geometry, Journal of Pure and Applied Algebra, Letters in Mathematical Physics, Science China Mathematics.