LISTA PUBBLICAZIONI

1. M. Aleandri, V. Fragnelli, S. Moretti. *Lexicographic Ranking Based on Minimal Winning Coalitions*. In: Leroch, M.A., Rupp, F. (eds) Power and Responsibility. Springer (2023)
2. M. Aleandri, M. Colangeli, D. Gabrielli. *A combinatorial representation for the invariant measure of diffusion processes on metric graphs*. ALEA Lat. Am. J. Probab. Math. Stat. 18, 2, (2021)
3. M. Aleandri, I.G. Minelli. *Delay-induced periodic behavior in competitive populations*. Journal of Statistical Physics 185, 6(2021)
4. M. Aleandri, M. Dall'Aglio, V. Fragnelli, S. Moretti. *Minimal winning coalitions and orders of criticality*. Annals of Operations Research. 2021
5. M. Aleandri, I. G. Minelli. *Opinion dynamics with Lotka-Volterrra type interactions*. Electronic Journal of Probability 2019, Vol. 24, paper no. 122, 1-31.
6. M. Aleandri, V. Di Giulio. *A model for interfaces and its mesoscopic limit* - Mathematics and Mechanics of Complex Systems, 2018 vol 6, No. 4.
7. M. Aleandri. *Inhomogeneous mean field models and applications*. Tesi di dottorato pubblicata a cura del Gran Sasso Science Institute 2020

Elenco Pubblicazioni

1) G. Ascione, M. Savov and B. Toaldo, “Regularity and asymptotics of densities of inverse subordinators”, Accepted on Transactions of the London Mathematical Society, 2024, n. citations 0, IF 0.8 (2022, IF 2023 not yet available). Allegata anche lettera di accettazione.
2) G. Ascione and J. Lőrinczi, “Bulk behaviour of ground states for relativistic Schrödinger operators with compactly supported potentials”, Annales Henri Poincare, 2023, n. citations 0, IF 1.5 (2022, IF 2023 not yet available).
3) G. Ascione, D. Castorina, and F. Solombrino, “Mean-field sparse optimal control of systems with additive white noise”, SIAM Journal on Mathematical Analysis, vol. 55, no. 6, pp. 6965–6990, 2023, n. citations 2, IF 3.1 (2022, IF 2023 not yet available)
4) G. Ascione and G. D’Onofrio. "Deterministic control of SDEs with stochastic drift and multiplicative noise: a variational approach." Applied Mathematics & Optimization 88.1, 11, 2023, n. citations 0, IF 1.8 (2022, IF 2023 not yet available)
5) G. Ascione, “A spherical rearrangement proof of the stability of a Riesz-type inequality and an application to an isoperimetric type problem”, ESAIM: Control, Optimisation and Calculus of Variations, vol. 28, 2022, n. citations 2, IF 1.4 (2022)
6) G. Ascione and J. Lőrinczi, “Potentials for non-local Schrödinger operators with zero eigenvalues”, Journal of Differential Equations, vol. 317, pp. 264–364, 2022, n. citations 7, IF 2.4 (2022)
7) G. Ascione, Y. Mishura and Enrica Pirozzi. "The Fokker–Planck equation for the time-changed fractional Ornstein–Uhlenbeck stochastic process." Proceedings of the Royal Society of Edinburgh Section A: Mathematics 152.4, pp. 1032-1057, 2022, n. citations 2, IF 1.3 (2022)
8) G. Ascione, “Abstract Cauchy problems for the generalized fractional calculus”, Nonlinear Analysis, vol. 209, p. 112 339, 2021, n. citations 17, IF 1.743 (2021)
9) G. Ascione, N. Leonenko, and E. Pirozzi, “Time-non-local Pearson diffusions”, Journal of Statistical Physiscs, vol. 183, no. 3, pp. 1–42, 2021, n. citations 8, IF 1.762 (2021)
10) G. Ascione, G. D’Onofrio, L. Kostal, and E. Pirozzi, “An optimal Gauss-Markov approximation for a process with stochastic drift and applications”, Stochastic Processes and their Applications, vol. 130, n.11, pp. 6481-6514 2020, n. citations 3, IF 1.467 (2020)
11) G. Ascione, N. Leonenko, and E. Pirozzi, “Fractional Erlang queues”, Stochastic Processes and their Applications, vol. 130, no. 6, pp. 3249–3276, 2020, n. citations 15, IF 1.467 (2020)
12) G. Ascione, E. Pirozzi, and B. Toaldo, “On the exit time from open sets of some semi-Markov processes”, Annals of Applied Probability, vol. 30, no. 3, pp. 1130–1163, 2020, n. citations 13, IF 1.872 (2020)
13) G. Ascione, “Probabilistic approach to non-local equations”, PhD Thesis.

Tesi di Dottorato:
F. Concetti, The full replica symmetry breaking solution in mean field spin glass models. Relator Giorgio Parisi. Università di Roma Sapienza, dipartimento di Fisica, Scuola di Dottorato Vito Volterra. Dottorato di Ricerca in Fisica– XXXI Ciclo

Articoli pubblicati su rivista:

J. of Phys. A: Mathematical and Theoretical **50** (6), 2017. F. Concetti, The replica symmetric solution for orthogonally constrained Heisenberg model on Bethe lattice. doi:10.1088/1751-8121/aa54d2

J. of Stat. Phys. **173** (5), 2018. F. Concetti, The full replica symmetry breaking in the Ising spin glass on random regular graph. doi: 10.1007/s10955-018-2142-6

Articoli sottomessi su archive online (arXiv):

arXiv:1908.03820v1, 2019. F. Concetti, Properties of the full replica symmetry breaking free energy functional of the Ising spin glass on random regular graph. doi: 10.48550/arXiv.1908.03820

arXiv:2102.08110, 2021. F. Concetti and M. Chertkov, Message passing descent for efficient machine learning. doi: 10.48550/arXiv.2102.08110

arXiv:2401.08529, 2024. D. Belius, F. Concetti, and G. Genovese, On the determinant in bray-moore's tap complexity formula. doi:10.48550/arXiv.2401.08529

Data: 09/07/2024

Dr. Lorenzo Dello Schiavo

1. List of Publications

(0) **L. Dello Schiavo**, *Diffusions on Wasserstein Spaces*, PhD Thesis, Rhenische Friedrich-Wilhelms-Universität Bonn, 2020

(1) **L. Dello Schiavo**, L. Portinale, and F. Sau. Scaling Limits of Random Walks, Harmonic Profiles, and Stationary Non-Equilibrium States in Lipschitz Domains. *Ann. Appl. Probab.*, 34(2):1789–1845, 2024. doi:10.1214/23-AAP2007

(2) **L. Dello Schiavo**, J. Maas, and F. Pedrotti. Local Conditions for Global Convergence of Gradient Flows and Proximal Point Sequences in Metric Spaces. *Trans. Amer. Math. Soc.*, 377(6):3779–3804, 2024. doi:10.1090/tran/9156

(3) **L. Dello Schiavo**, E. Kopfer, and K.-T. Sturm. A Discovery Tour in Random Riemannian Geometry. *Potential Anal.*, 2024. doi:10.1007/s11118-023-10118-0

(4) **L. Dello Schiavo** and E. W. Lytvynov. A Mecke-type Characterization of the Dirichlet–Ferguson Measure. *Electron. Commun. Probab.*, 28:1–12, 2023. doi:10.1214/23-ECP528

(5) **L. Dello Schiavo** and M. Wirth. Ergodic Decompositions of Dirichlet Forms under Order Isomorphisms. *J. Evol. Equ.*, 23(9), 2023. 22 pp. doi:10.1007/s00028-022-00859-7

(6) T. Cremaschi and **L. Dello Schiavo**. Effective Contraction of Skinning Maps. *Proc. Amer. Math. Soc. B*, 9:445–459, 2022. doi:10.1090/bproc/134

(7) **L. Dello Schiavo**. The Dirichlet–Ferguson Diffusion on the Space of Probability Measures over a Closed Riemannian Manifold. *Ann. Probab.*, 50(2):591–648, 2022. doi:10.1214/21-AOP1541

(8) **L. Dello Schiavo** and K. Suzuki. Sobolev-to-Lipschitz Property on QCD-spaces and Applications. *Math. Ann.*, 384:1815–1832, 2022. 18 pp. doi:10.1007/s00208-021-02331-2

(9) **L. Dello Schiavo** and K. Suzuki. Rademacher-type theorems and Sobolev-to-Lipschitz properties for strongly local Dirichlet spaces. *J. Funct. Anal.*, 281(11):109234, dec 2021. 63 pp. doi:10.1016/j.jfa.2021.109234

(10) **L. Dello Schiavo**. Ergodic Decomposition of Dirichlet Forms via Direct Integrals and Applications. *Potential Anal.*, 58:573–615, 2023. 43 pp. doi:10.1007/s11118-021-09951-y

(11) **L. Dello Schiavo**. A Rademacher-type theorem on L^2-Wasserstein spaces over closed Riemannian manifolds. *J. Funct. Anal.*, 278(6):108397, 2020. 51 pp. doi:10.1016/j.jfa.2019.108397

(12) **L. Dello Schiavo**. Characteristic functionals of Dirichlet measures. *Electron. J. Probab.*, 24(115):1–38, 2019. doi:10.1214/19-EJP371

Vienna, July 9, 2024

Lorenzo Dello Schiavo

Produzione scientifica

Francesco Iafrate

Articoli in rivista

1. *Drifted Brownian motions governed by fractional tempered derivatives* , con M. D'Ovidio and E. Orsingher, *Modern Stochastics: Theory and Applications*, **5**(4) 445–456 (2018)

2. *Some results on the Brownian meander with drift*, con E. Orsingher, *Journal of Theoretical Probability*, **33**, 1034–1060 (2020) *online since: Mar 2019*

3. *Last zero crossing of an iterated Brownian motion with drift* , con E. Orsingher, *Stochastics* **92**, 356–378 (2020) *online since: Jun 2019*

4. *Asymptotic results for the last zero crossing time of a Brownian motion with non-null drift*, con C. Macci, *Statistics and Probability Letters*, **166** (2020)

5. *On the sojourn time of a generalized Brownian meander*, con E. Orsingher, *Statistics and Probability Letters*, **168** (2021) *online since: Sep 2020*

6. *On the Fractional Wave Equation*, con E. Orsingher, *Mathematics*, **8**(6) (2020)

7. *Regularized Bridge-type estimation with multiple penalties*, con A. De Gregorio, *Ann Inst Stat Math* (2020) *Ann Inst Stat Math* **73**, 921–951, (2021)

8. *Telegraph random evolutions on a circle*, con A. De Gregorio, *Stochastic Processes and their Applications*, **141**, 79–108 (2021)

9. *Elastic drifted Brownian motions and non-local boundary conditions.*, con M. D'Ovidio, *Stochastic Processes and their Applications*, **167**, 104228, (2024)

10. *Some families of random fields related to multiparameter Lévy processes.*, con C. Ricciuti, *Journal of Theoretical Probability*,
https://doi.org/10.1007/s10959-024-01351-3 (2024)

11. *Path dynamics of time-changed Levy processes: a martingale approach*, con A. De Gregorio, *Journal of Theoretical Probability (accepted)*, (2024)

Tesi di Dottorato

Functionals of drifted Brownian motion and tempered fractional equations, Advisor prof. E. Orsingher, *Scuola di Dottorato in Scienze Statisiche*, curriculum "Statistica Metodologica" (2020)

ELENCO DELLE PUBBLICAZIONI PRESENTATE – Matteo Quattropani

Il sottoscrito, oltre alla tesi di dottorato

- M. Quattropani, *Mixing and cover times of sparse random digraphs*, **Università degli Studi Roma Tre**, 27 Aprile 2020

dichiara di voler sottoporre al giudizio della Commissione le seguenti pubblicazioni:

1. P. Caputo and M. Quattropani, *Stationary distribution and cover time of sparse directed configuration models*, **Probability Theory and Related Fields**, volume 178, pages 1011–1066, 2020

2. P. Caputo and M. Quattropani, *Mixing time of PageRank surfers on sparse random digraphs*, **Random Structures and Algorithms**, volume 59, issue 3, pages 376–406, 2021

3. P. Caputo and M. Quattropani, *Mixing time trichotomy in regenerating dynamic digraphs*, **Stochastic Processes and their Applications**, volume 137, pages 222–251, 2021

4. F. Manzo, M. Quattropani and E. Scoppola, *A probabilistic proof of Cooper and Frieze's "First Visit Time Lemma"*, **ALEA Latin American Journal of Probability and Mathematical Statistics**, volume 18, pages 1739-1758, 2021

5. L. Avena, A. Gaudillière, P. Milanesi and M. Quattropani, *Loop-erased partitioning of a graph: mean-field analysis*, **Electronic Journal of Probability**, volume 27, pages 1-35, 2022

6. M. Quattropani and F. Sau, *Mixing of the Averaging process and its discrete dual on finite-dimensional geometries*, **Annals of Applied Probability**, volume 33, issue 2, 936-971, 2023

7. P. Caputo, M. Quattropani and F. Sau, *Cutoff for the Averaging process on the hypercube and complete bipartite graphs*, **Electronic Journal of Probability**, volume 28, pages 1-31, 2023

8. X. S. Cai, P. Caputo, G. Perarnau and M. Quattropani, *Rankings in directed configuration models with heavy tailed in-degrees*, **Annals of Applied Probability**, volume 33, issue 6B, pages 5613-5667, 2023

9. M. Quattropani and F. Sau, *On the meeting times of random walks on random DFA*, **Stochastic Processes and their Applications**, volume 166, 104225, 2023

10. L. Avena, F. Capannoli, R. S. Hazra and M. Quattropani, *Meeting, coalescence and consensus time on random directed graphs*, **Annals of Applied Probability**, to appear (https://imstat.org/journals-and-publications/annals-of-applied-probability/annals-of-applied-probability-future-papers/). Si allega alla pubblicazione la lettera di accettazione da parte dell'editore.

11. N. Forien, M. Quattropani, A. Quitmann and L. Taggi, *Coexistence, enhancements and short loops in random walk loop soups,* **Probability and Mathematical Physics**, volume 5, number 3, pages 753-784, 2024.

12. M. Quattropani, Mixing trichotomy for an Ehrenfest urn with impurities*,* **Electronic Communications in Probability**, to appear. Si allega alla pubblicazione la lettera di accettazione da parte dell'editore.

Si dichiara che la lista delle pubblicazioni sopraelencate corrisponde a verità ai sensi degli art. 46 e 47 D.P.R. 28/12/2000 n. 445.

Roma, 12 Luglio 2024

Matteo Quattropani

FEDERICO SAU

List of the 12 publications + PhD thesis

F. Sau
Symmetric interacting particle systems: Self-duality and hydrodynamics in dynamic random environment
Delft University of Technology, 2019

selected for the evaluation.

1. C. Landim, R. Misturini, F. Sau
Full Γ-expansion of reversible Markov chains level two large deviations rate functionals
Annals of Applied Probability, to appear in 2024
https://imstat.org/journals-and-publications/annals-of-applied-probability/annals-of-applied-probability-future-papers/

2. F. Sau
Concentration and local smoothness of the averaging process
Electronic Journal of Probability, 29:1-26, 2024
DOI: 10.1214/24-EJP1154

3. S. Kim and F. Sau
Spectral gap of the symmetric inclusion process
Annals of Applied Probability, to appear in 2024
https://imstat.org/journals-and-publications/annals-of-applied-probability/annals-of-applied-probability-future-papers/

4. L. Dello Schiavo, L. Portinale and F. Sau
Scaling limits of random walks, harmonic profiles and stationary non-equilibrium steady states in Lipschitz domains
Annals of Applied Probability, 34(2):1789-1845, 2024
DOI: 10.1214/23-AAP2007

5. P. Caputo, M. Quattropani and F. Sau
Cutoff for the Averaging process on the hypercube and complete bipartite graphs
Electronic Journal of Probability, 28(100):1-31, 2023
DOI: 10.1214/23-EJP993

6. M. Quattropani and F. Sau
On the meeting times of random walks on random DFA
Stochastic Processes and their Applications, 166(104225):1-33, 2023
DOI: 10.1016/j.spa.2023.104225

7. M. Quattropani and F. Sau
Mixing of the Averaging process and its discrete dual on finite-dimensional geometries
Annals of Applied Probability, 33(2):936-971, 2023
DOI: 10.1214/22-AAP1838

(with a mention on David Aldous' Open Problems webpage:
https://www.stat.berkeley.edu/~aldous/Research/OP/half_coupled.html)

8. C. Franceschini, P. Goncalves and F. Sau
Symmetric inclusion process with slow boundary: hydrodynamics and hydrostatics

Bernoulli, 28(2):1340-1381, 2022
DOI: 10.3150/21-BEJ1390

9. S. Floreani, F. Redig and F. Sau
Orthogonal polynomial duality of boundary driven particle systems and non-equilibrium correlations
Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques, 58(1):220-247, 2021
DOI: 10.1214/21-AIHP1163

10. S. Floreani, F. Redig and F. Sau
Hydrodynamics for the partial exclusion in random environment
Stochastic Processes and their Applications, 142:124-158, 2021
DOI: 10.1016/j.spa.2021.08.006

11. F. Redig, E. Saada and F. Sau
Symmetric simple exclusion process in dynamic random environment: hydrodynamics
Electronic Journal of Probability, 25(138):1-47, 2020
DOI: 10.1214/20-EJP536

12. F. Redig and F. Sau
Generalized immediate exchange models and their symmetries
Stochastic Processes and their Applications, **127**(10):3251-3267, 2017
DOI:10.1016/j.spa.2017.02.005

Elenco numerato delle pubblicazioni scientifiche

Testi già pubblicati

1. Articolo in rivista: M. Notarnicola, G. Peccati, A. Vidotto (2023). Functional Convergence of Berry's Nodal Lengths: Approximate Tightness and Total Disorder. *Journal of Statistical Physics*, vol. 190, p. 1-41, ISSN: 0022-4715, doi: 10.1007/s10955-023-03111-9

2. Articolo in rivista: A. Vidotto (2022). Random Lipschitz-Killing Curvatures: Reduction Principles, Integration By Parts And Wiener Chaos. *Theory of Probability and Mathematical Statistics*, vol. 106, p. 157-175, ISSN: 0094-9000, doi: 10.1090/tpms/1170

3. Articolo in rivista: D. Marinucci, M. Rossi, A. Vidotto (2021). Non-Universal Fluctuations of the Empirical Measure for Isotropic Stationary Fields on $\mathbb{S}^2 \times \mathbb{R}$, *The Annals of Applied Probability*, vol. 31, p. 2311-2349, ISSN: 1050-5164, doi: 10.1214/20-AAP1648 - Articolo in rivista

4. Articolo in rivista: A. Caponera, C. Durastanti, A. Vidotto (2021). LASSO estimation for spherical autoregressive processes, *Stochastic Processes and their Applications*, vol. 137, p. 167-199, ISSN: 0304-4149, doi: 10.1016/j.spa.2021.03.009

5. Articolo in rivista: A. Vidotto (2021). A Note on the Reduction Principle for the Nodal Length of Planar Random Waves, *Statistics and Probability Letters*, vol. 174, ISSN: 0167-7152, doi: 10.1016/j.spl.2021.109090

6. Articolo in rivista: G. Peccati e A. Vidotto (2020). Gaussian Random Measures Generated by Berry's Nodal Sets, *Journal of Statistical Physics*, vol. 178, p. 996-1027, ISSN: 0022-4715, doi: 10.1007/s10955-019-02477-z

7. Articolo in rivista: A.Vidotto (2020). An improved second order Poincaré inequality for functionals of Gaussian fields, *Journal of Theoretical Probability*, vol. 33, p. 396-427, ISSN: 0894-9840, doi: 10.1007/s10959-019-00883-3

8. Articolo in rivista: C. Döbler, A. Vidotto e G. Zheng (2018). Fourth moment theorems on the Poisson space in any dimension, *Electronic Journal of Probability*, vol. 23, p. 1-27, ISSN: 1083-6489, doi: 10.1214/18-EJP168

Testi accettati per la pubblicazione

9. Articolo in rivista: D. Marinucci, M. Rossi, A. Vidotto (2024). Fluctuations of Level Curves for Time-Dependent Spherical Random Fields, `arXiv:2207.13028`, in fase di pubblicazione su *Annales Henri Lebesgue*, ISSN: 2644-9463

10. Articolo in rivista: C. Macci, M. Rossi, A. Vidotto (2024). Non-Universal Moderate Deviation Principle for the Nodal Length of Arithmetic Random Waves, `arXiv:2206.15108`, in fase di pubblicazione su *ALEA, Latin American Journal of Probability and Mathematical Statistics*, ISSN: 1980-0436

Tesi di dottorato

11. A. Vidotto, *New probabilistic approximations for non-linear functionals of random fields and random measures*, Relatore: Prof. Giovanni Peccati, University of Luxembourg, Novembre 2018, 191 pagine

Michele Aleandri

Academic Curriculum Vitae

CURRENT POSITION

2024 - now **Postdoctoral research** at LUISS University.

PAST EXPERIENCES

2023 - 2024 **Postdoctoral research** at Scuola Normale Superiore Pisa.

2022-2023 **Postdoctoral researcher** at University La Sapienza, Department of Mathematics.

2022-2022 **Postdoctoral researcher** at University of Bologna, Department of Statistical Sciences.

2019-2022 **Postdoctoral researcher** at LUISS University.

2018-2019 **Junior scientist** at Gran Sasso Science Institute.

EDUCATION AND TRAINING

2015-2018 **Ph.D. in Mathematics**, *GSSI-Gran Sasso Science Institute*, L'Aquila-Italy
Thesis title: *Inhomogeneous mean field models and applications* (advisor Paolo Dai Pra, co-advisor Ida G. Minelli).

2013–2014 **Master's degree in Mathematics LM-40**, *Università la Sapienza*, Rome, grade 110/110 cum laude
Thesis title: *Second order large deviation for East model* (advisor Lorenzo Bertini Malgarini).

2010–2012 **Bachelor's degree**, *Università la Sapienza*, Rome, grade 110/110
Thesis title: *Introduction to the studying of some semilinear equations* (advisor Lucio Boccardo).

2005–2009 **High school graduation**, *Liceo scientifico Falcone-Borsellino*, Zagarolo(RM), grade 100/100
I partecipated to the European project **MasterClass INFN**

RESEARCH ACTIVITIES

My research activity focuses on the following topics:
- Interacting particle systems and opinion dynamics;
- invariant measures of diffusion processes on metric graphs;
- cooperative games and power indices;
- critical fluctuation and Hopf Bifurcations;
- social Tipping points;
- price manipulation and differential games.

CONFERENCES AND TALKS

- *European Meeting on Game Theory 2024 (SING19)* July 2024 - Besancon (France)- Talk
- *EURO* June 2024 - Copenhagen (Danmark)- Talk

- *Fourth Italian meeting on probability and mathematical statistics* June 2024 - Rome , Italy - **Contributed session organizer**
- *Quantitative finance workshop* April 2024 - Bologna , Italy - Talk
- *TOWARDS JUST TRANSITIONS: CARBON BUDGET, SUSTAINABILITY, AND SOCIAL TIPPING POINTS* October 2023 - Pisa , Italy - **Organizing and scientific committee member**
- *AMASES* September 2023 - Milan , Italy - **Contributed session organizer** and Talk
- *SPA - Stochastic Processes and their Applications* July 2023 - Lisbon , Portugal - **Contributed session organizer** and Talk
- *Groupe de Travail Modélisation Stochastique* JUne 2023 - Paris , France - **Invited**- Talk
- *Teaching for learning* "Teaching undergraduate math at Luiss: old problems and new perspectives" 2023 - Rome, Italy - Talk
- *SPASS seminar* 2023 - Pisa, Italy - **invited**- Talk
- *Quatitative Finance Workshop* 2023 - Gaeta, Italy - **Organizing committee member**
- *THEMIS seminars* 2022 - LAMSADE Paris, France - **invited**- Talk
- *A journey through complex systems: from interacting particles to games* 2022 - L'Aquila, Italy - **invited**- Talk
- *SING 17 - 17th European Meeting on Game Theory* 2022 - Online - Talk
- *One day - Young Researchers Seminar: Maths, Applications and Models* 2022 - Verona, Italy - **invited**- Talk
- *Third Italian meeting on Probability and mathematical statistics* 2022 - Bologna ,Italy - **invited**- Talk
- *100 years UMI - 800 years UniPD* 2022 - Padova (Italy)- Talk
- *Workshop YEP XVII - Interacting particle systems* 2021 - Eurandom (online)- Talk
- 10^{th} *World Congress in Probability and Statistics* 2021 - Seul, Korea (online)- Talk
- *Modern Stochastics: Theory and Applications V* 2021 - Kyiv, Ukraine (online)- Talk
- *16th European Meeting on Game Theory (SING16)* 2021 - Granada, Spain (online) - Talk
- *PRIN meeting "ALGADIMAR"*, 2020 - Rome, Italy - La Sapienza (online)
- *GAMES 2020 - 6th World Congress of the Game Theory Society* 2021 - Budapest, Hungary (online) - Talk
- *Bernoulli - IMS One World Symposium* 2020 - A virtual one week symposium. - Talk
- *Second Italian Meeting on Probability and Mathematical Statistics* 2019 - Vietri sul mare, Italy - **invited** - Talk
- *40th Stochastic Processes and their Applications International Conference* SPA2018 - Gothenburg, Sweden- Talk
- *Stochastic models in ecology and evolutionary biology* SMEEB2018 - Venice, Italy- Talk

SUMMER SCHOOLS

- *Scaling limits and generalized hydrodynamics* 2023 - L'Aquila, Italy.
- *Preferences, decisions and games* 2019 - Paris, France.

- *Stochastic Dynamics out of Equilibrium* 2017 - Marseille, France.

GRANTS

2024 "Threshold models for social norm change in interacting particle society", **PI** of the research project supported by INDAM-GNAMPA

2021 European Kovalevskaya Travel Grant and Kovalevskaya Grant for attending the International Congress of Mathematicians ICM 2022 in St. Petersburg, Russia in July 2022 (changed to an online meeting) .

2021 Indam GNAMPA travel grant for participation to the "Third Italian Meeting in Probability and Mathematical statistics" Bologna 2022.

2018 Funding for the organization of the 136th European Studied Group with Industries - L'Aquila by COST Action TD1409, Mathematics for Industries(MI-NET) - Principal Investigator (jointly with A. Esposito and L.E. Hientzsch), total grant 4850 euro .

RESEACH PROJECT

2023 " Modelli Matematici per i Processi Decisionali riguardanti la Transizione Energetica", Partecipat to the research project supported by INDAM-GNAMPA, PI: M. Leocata, Scuola Normale Superiore

2020 "Criticality and universality: the disordered Kuramoto model", Partecipat to the research project supported by INDAM-GNAMPA, PI: F. Collet, University of Padova.

2019-2021 "ALGADIMAR - ALgorithms, GAmes and DIgital MARkets" Patecipant to the PRIN2017, PI: Marco Scarsini , LUISS University

ACTIVITIES

2022 I am in the organizing committee of the "XIV Workshop on Quantitative Finance" 2023 held in Gaeta, Italy.

2021 I partecipated to the 165th European Study Group with Industries - Durham University as mentor of the working gourp on "Encouraging Safe, Green and Economically Sustainable use of our Natural Environment".

2018 I was one of the organisers of the 136th European Study Group with Industries, May 14-18 in L'Aquila.

2016 I partecipated to the 124th European Study Group with Industries in Rome. I worked on " Mathematical and statistical analysis to support service performance forecasting in queuing systems " .

TEACHING ACTIVITIES

2024-now Professor of **Matematica generale** - *undergraduate course* at LUISS.

2024-now **Games and Network** *graduate course* at LUISS University. Teaching assistant for the professor Marco Scarsini.

2023-2024 **Probability** *graduate course* at LUISS University. Teaching assistant for the professor Marco Scarsini.

2022-2023 Professor of **Metodi matematici per la valutazione finanziaria** - *undergraduate course* at University Niccolò Cusano.

2022-now **Games and Strategies** *undergraduate course* at LUISS University. Teaching assistant for the professors Roberto Lucchetti and Marco Scarsini.

2021-2023 Professor of **Mathematics 1** - *undergraduate course* at LUISS University.

2021-2022 **Matematica generale** *undergraduate course* at University of Cassino. Teaching assistant for the professor Marina di Giacinto.

2021-2022 **Matematica finanziaria** *undergraduate course* at University of Cassino. Teaching assistant for the professor Marina di Giacinto.

2020-2021 **Social Network Analysis** *undergraduate course* at LUISS University. Teaching assistant for the professor Xavier Venel.

2020-2022 **Preliminary course Mathematics** *undergraduate course* at LUISS University.

2020-now **Mathematics and Financial Mathematics Tutor** *undergraduate course* at University Guglielmo Marconi.

2019-2021 **Mathematics** *undergraduate course* at LUISS University. Teaching assistant for the professor Marco Dall'Aglio.

2019-2021 **Games and Strategies** *undergraduate course* at LUISS University. Teaching assistant for the professors Roberto Cominetti and Roberto Lucchetti.

2018-2020 **Mathematics and Probability Tutor** *undergraduate and graduate courses* at LUISS University.

2019 **Probability** *undergraduate course* at LUISS University. Oline preliminary course.

2018 **Probability** *graduate course* at LUISS University. Teaching assistant for the professor Marco Scarsini.

SUPERVISION

2023 Mattia Bertezzolo: *Bachelor thesis* - "Duration e immunizzazione finanziaria". University Guglielmo Marconi, jointly with professor F. Gismondi.

2023 Marco Castelli: *Bachelor thesis* - "L'anatocismo e i pianindi ammortamento". University Guglielmo Marconi, jointly with professor F. Gismondi.

2022 Giulia Pallotta: *Master thesis* - "Freidlin–Wentzell Theory on Metric Graphs". University of L'Aquila, jointly with professor D. Gabrielli.

LANGUAGES

Mother tongue: Italian

Others: English *Level C1*

IT SKILLS

Use of: Windows, F90, Matlab, Mathematica, Microsoft Office, Photoshop, LaTeX.

LIST OF PUBLICATIONS

- M. Aleandri, V. Fragnelli, S. Moretti. *Lexicographic Ranking Based on Minimal Winning Coalitions.* In: Leroch, M.A., Rupp, F. (eds) Power and Responsibility. Springer (2023)
- M. Aleandri, M. Colangeli, D. Gabrielli. *A combinatorial representation for the invariant measure of diffusion processes on metric graphs.* ALEA Lat. Am. J. Probab. Math. Stat. 18, 2, pag 1773-1799(2021)

- M. Aleandri, I.G. Minelli. *Delay-induced periodic behavior in competitive populations.* Journal of Statistical Physics 185, 6(2021)
- M. Aleandri, M. Dall'Aglio, V. Fragnelli, S. Moretti. *Minimal winning coalitions and orders of criticality.* Annals of Operations Research. (2021)
- M. Aleandri, I. G. Minelli. *Opinion dynamics with Lotka-Volterrra type interactions.* Electronic Journal of Probability (2019), Vol. 24, paper no. 122, 1-31.
- M. Aleandri. *Inhomogeneous mean field models and applications.* PhD Thesis, Gran Sasso Science Institute (2019).
- M. Aleandri, V. Di Giulio. *A model for interfaces and its mesoscopic limit-* Mathematics and Mechanics of Complex Systems, (2018) vol 6, No. 4.

PRE-PRINT

- M. Aleandri, M. Dall'Aglio *A Coopetition Index for Coalitions in Simple Games* - arXiv:2407.01383 - 2024
- M. Aleandri, F. Fritz, S. Moretti *Desirability and social rankings* - arXiv:2404.18755 - 2024
- M. Aleandri, M. Dall'Aglio *With a little help from my friends: essentiality vs opportunity in group criticality* - arXiv:2207.03565 - 2022
- S. Abrahams, M.Aleandri (group mentor), et. al. *Encouraging Safe, Green, and Economically Sustainable Use of our Natural Environment* - Mathematics in Industry Reports DOI: 10.33774/miir-2022-s6rzm-v2 2022

GIACOMO ASCIONE
Curriculum Vitae

Napoli
14/07/2024
Ai fini della pubblicazione

Part I – General Information

Full Name	Giacomo Ascione
Spoken Languages	Italian, English

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
University graduation	2015	Università degli Studi di Napoli Federico II	Bachelor, 110/110 cum laude
University graduation	2017	Università degli Studi di Napoli Federico II	Master Degree, 110/110 cum laude
PhD	2021	Università degli Studi di Napoli Federico II	Excellent cum laude

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
01/05/2021	31/10/2021	Università degli Studi di Napoli Federico II	Postdoc research fellow
01/11/2021	Current Position	Scuola Superiore Meridionale	Postdoc research fellow

Part IV – Teaching experience

Year	Institution	Lecture/Course
2023/2024	Scuola Superiore Meridionale	PhD Course: Stochastic modeling and probability calculus, 12 hrs
2022/2023	Università degli Studi di Salerno	PhD Course: Branching Processes and their Applications to Population Dynamics, 20 hrs
2022/2023	Scuola Superiore Meridionale	PhD Course: Stochastic modeling and probability calculus, 12 hrs
2021/2022	Università degli Studi di Napoli Federico II	Additional Didactics for the Master Course (in Mathematics) “Complementi di Probabilità”, with Prof. Enrica Pirozzi, 10 hrs
2021/2022	Università degli Studi di Napoli Federico II	Additional Didactics for the Master Course (in Mathematics) “Modelli Stocastici e Metodi Statistici” with Prof. Enrica Pirozzi,

		10 hrs
2019/2020	University of Granada	PhD Course: Càlculo Estocàstico y Tècnicas de Anàlisis Multivariante. Fundamentos y aplicaciones en Ciencias Experimentales, 4 hrs
2019/2020	Università degli Studi di Napoli Federico II	Additional Didactics for the Master Course (in Mathematics) "Modelli Stocastici e Metodi Statistici" with Prof. Enrica Pirozzi, 10 hrs
2018/2019	Università degli Studi di Napoli Federico II	Exercise lectures for "Analisi I" (Bachelor degree in mathematics), 4 hrs

Part V - Society memberberships, Awards and Honors

Year	Title
2019-2024	Unione Matematica Italiana
2018-2019	Istituto Nazionale di Alta Matematica – Gruppo Nazionale di Calcolo Scientifico
2020-2024	Istituto Nazionale di Alta Matematica – Gruppo Nazionale di Analisi Matematica e Probabilità
2020-2024	Gruppo PRISMA (dell'Unione Matematica Italiana). Since 2023, Member of the Board of the Group
2024	European Mathematical Society

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2024	Deterministic Control of Stochastic Dynamics (I)	GNAMPA Research Projects	3000€
2022	Anomalous Phenomena on Regular and Irregular Domains: Approximating Complexity for the Applied Sciences (I)	PRIN	
2017	Stochastic models for complex systems (I)	PRIN	

Part VII – Research Activities

Keywords	Brief Description
Nonlocal operators Markov and Lèvy processes	My research activity mainly focuses on the study of Integro-Differential equations related to general time/space-nonlocal operators and their stochastic representation. For space-nonlocal operators, I dedicated some

Semi-Markov processes Nonlocal Schrodinger equations Deterministic control of stochastic processes	works to the study of nonlocal Schrodinger operators, with particular attention to the properties of their spectrum and their ground state eigenfunction. Concerning time-nonlocal operators, I focused on time-changed non-Markov processes and their relation with some convolution-type operators, using them to study the properties of several time-nonlocal (Parabolic Partial Differential) equations. Together with these, I also worked on some problems in calculus of variations, optimal control and geometric theory of Banach spaces.

Part VII.i-Talks and Communications in national and international conferences

-Relatore al "9th European Congress on Mathematics", tenutosi a Siviglia (Spagna), durante il minisimposio "Non-Local Operators And Stochastic Processes: Fractional Processes, Random Fields, And Applications" con seminario dal titolo "Nonlinear nonlocal equations in a mean field limit system", in data 16/07/2024
-Relatore al "9th European Congress on Mathematics", tenutosi a Siviglia (Spagna), durante il minisimposio "Geometric And Regularity Aspects Of Sub-Elliptic Pdes: Form Kinetic Equations To Hormander's Vector Fields" con seminario dal titolo "Well-posedness results for degenerate Kolmogorov equations with unbounded drift", in data 15/07/2024
-Relatore su invito al "Fourth Italian Meeting on Probability", tenutosi a Roma, con seminario dal titolo "Time-nonlocal operators in probability: a brief summary", in data 13/06/2024. Il seminario si è tenuto nella sessione su invito organizzata dal sottoscritto: gli organizzatori delle sessioni hanno tenuto seminari nelle proprie sessioni (qualora non fossero previsti in altre) su richiesta del comitato organizzatore del convegno.
-Relatore su invito al workshop "Fractional Calculus, Probability and NonLocal Operators", tenutosi a Bilbao (Spagna), con seminario dal titolo "Nonlinear nonlocal equations in a mean field limit system and their optimal control", in data 20/05/2024
-Relatore su invito alla "First Annual Conference of SUMMIT", tenutasi a Sofia (Bulgaria), con seminario dal titolo "Asymptotics of densities of inverse subordinators", in data 24/04/2024
-Relatore al convegno "EUROCAST 2024", tenutosi a Las Palmas de Gran Canaria (Spagna), con seminario dal titolo "A Sojourn-Based Approach to Discrete-time Semi-Markov Reinforcement Learning", in data 26/02/2024
-Relatore su invito al "Workshop on Stochastics, Memory and Roughness", tenutosi a Oslo (Norvegia), con seminario dal titolo "The Fokker-Planck equation of the time-changed fractional Brownian motion and Ornstein-Uhlenbeck processes", in data 27/01/2024
-Relatore su invito al Workshop "STochastic Analysis and Related Topics 2023", tenutosi a Dresda, in Germania, con seminario dal titolo "Coupling Plateaux and Jumps: the Undershooting of Subordinators and the Corresponding Semi-Markov Processes", in data 23/11/2023
-Relatore al "XXII Congresso dell'Unione Matematica Italiana, tenutosi a Pisa, con seminario dal titolo "The curve-crossing problem for the delayed Brownian motion", in data 08/09/2023
-Relatore, in un Minisimposio, al Convegno "Dynamic Days 2023", tenutosi a Napoli, con seminario dal titolo "Mean field sparse optimal control of systems with additive white noise", in data 07/09/2023
-Relatore al "Bi-annual congress of the Italian Society of Applied and Industrial Mathematics, 2023", tenutosi a Matera, con seminario dal titolo "The delayed Brownian motion killed on a moving threshold and its anomalous diffusive behaviour", in data 28/08/2023
-Relatore in una sessione su invito al "10th International Workshop on Applied Probability", tenutosi a Salonicco, in Grecia, con seminario dal titolo "Coupling Plateaux and Jumps: the Undershooting of Subordinators and the Corresponding Semi-Markov Processes", in data 08/06/2023

-Relatore in una sessione su invito a “Applied Stochastic Models and Data Analysis International Conference”, tenutosi ad Heraklion, in Grecia, con seminario dal titolo “On the Uniform Ergodicity of a Class of Semi-Markov Processes”, in data 06/06/2023. A causa della vicinanza temporale tra questo invito e il precedente, il sottoscritto ha tenuto il seminario in via telematica.
- Relatore su invito al “Workshop on Fractional Calculus, Special Functions and Applications”, tenutosi a Roma, con il seminario dal titolo “Spectral methods in generalized fractional calculus and time-changed processes: an overview”, in data 12/05/2023
-Relatore su invito a “International Workshop on Stochastic Processes and their Applications 3” organizzato dall’Università di Madrid, ma tenutosi telematicamente, con seminario dal titolo “Coupling plateaux and jumps: the undershooting of subordinators and the corrisponding semi-Markov processes”, in data 12/01/2023
-Relatore su invito al workshop “Probability and NonLocal Operators 3”, tenutosi a Torino, con seminario dal titolo: Coupling plateaux and jumps: the undershooting of subordinators and the corrisponding semi-Markov processes”, in data 02/12/2022
-Relatore al “Third Italian Meeting on Probability and Mathematical Statistics”, tenutosi a Bologna, con seminario dal titolo “Mean field sparse optimal control of systems with additive white noise”, in data 14/06/2022
-Relatore al convegno “100 years of the Unione Matematica Italiana and 800 years of the University of Padova”, tenutosi a Padova, con seminario dal titolo “Semi-Markov processes, time-nonlocal equations and related spectral methods”, in data 26/05/2022
-Seminario su invito nell’ambito dei seminari del gruppo UMI PRISMA, tenutosi Online, dal titolo “Spectral methods for time-changed birth-death processes”, in data 04/04/2022
-Seminario durante il programma INI (Isaac Newton Institute, Cambridge, Gran Bretagna) “Fractional Differential Equations”, dal titolo “Non-local Schrodinger operators with eigenvalues at the spectral edge”, in data 14/03/2022. A causa di diverse complicazioni di viaggio (relative alla situazione pandemica), il seminario si è tenuto in via telematica.
-Relatore su invito al workshop “Deterministic and stochastic fractional differential equations and jump processes”, durante il programma il programma INI (Isaac Newton Institute, Cambridge, Gran Bretagna) “Fractional Differential Equations”, dal titolo “Non-local Birth-Death processes”, in data 23/02/2022. A causa di diverse complicazioni di viaggio (relative alla situazione pandemica), il seminario si è tenuto in via telematica.
-Relatore al “2nd International Workshop on Stochastic Processes and their Applications”, organizzato dall’Università di Madrid, ma tenutosi telematicamente, con seminario dal titolo “The curve-crossing problem for the delayed Brownian motion”, in data 02/12/2021.
-Relatore su invito al workshow “Probability and non-local operators”, tenutosi a Roma, con seminario dal titolo “Exit times of semi-Markov processes: asymptotics and moving boundaries”, in data 29/10/2021
-Relatore in minisimposio al “8th European Congress of Mathematics”, programmato a Portorosa, in Slovenia, ma tenutosi in differita a causa della situazione di natura pandemica, con seminario dal titolo “Time-Changed Fractional Ornstein-Uhlenbeck Process”, in data 23/06/2021
-Relatore su invito al workshop “Modern Stochastics: Theory and Applications V”, programmato a Kyiv, in Ucraina, ma tenutosi in differita a causa della situazione di natura pandemica, con seminario dal titolo “On Exit Times from Open Sets of Time-Changed Markov Processes”, in data 02/06/2021
-Relatore al “International Workshop on Stochastic Processes and Their Applications”, organizzato dall’Università di Madrid, ma tenutosi telematicamente, con seminario dal titolo “Non-local Pearson diffusions”, in data 09/12/2020.
-Relatore al “Kick-off Meeting of the PRIN 2017 Project: Stochastic models for complex systems”, organizzato congiuntamente dalle Università degli Studi di Napoli e Salerno, tenutosi telematicamente a causa della situazione di natura pandemica, con seminario dal titolo “The weak maximum principle for a non-standard fractional Fokker-Planck equation”, in data 08/07/2020. Di

tale workshop, il sottoscritto è stato anche nel Comitato Organizzatore Locale. Ha tenuto il seminario a seguito della decisione del Comitato Scientifico di far tenere in ogni caso seminari ai componenti non strutturati del progetto PRIN 2017, anche se nel Comitato Organizzatore Locale.
-Poster al "Mathematical Modeling for Science and Engineering", tenutosi a Napoli, dal titolo "Fractional queues", in data 11/09/2019
-Relatore al "XXI Congresso dell'Unione Matematica Italiana", tenutosi a Pavia, con seminario dal titolo "Fractional Immigration-Death Processes", in data 03/09/2019
-Seminario durante il Periodo Intensivo organizzato dall'INdAM a Napoli, dal titolo "On Solutions of some Discretized Fractional Kolmogorov Equations", in data 11/07/2019
-Poster al "Second Italian Meeting on Probability and Mathematical Statistics", organizzato congiuntamente dalle Università degli Studi di Napoli e Salerno, tenutosi a Vietri sul Mare, dal titolo "On the Exit Time from Open Sets of Some Semi-Markov Processes", in data 18/06/2019
-Relatore alla "International Conference on Elliptic and Parabolic Problems", tenutasi a Gaeta, con seminario dal titolo "On subspaces of some Morse spaces", in data 20/05/2019
-Relatore alla conferenza "Eurocast 2019", tenutasi a Las Palmas de Gran Canaria, in Spagna, con seminario dal titolo "A Toy Model for a Semi-Markov SIR Process: An Approach via Simulation", in data 18/02/2019
-Relatore al workshop "Methods of Real Analysis and Theory of Elliptic Systems", tenutosi a Roma, con seminario dal titolo "On the norm attaining property in BLO of VLO functions", in data 20/09/2018

Part VII.ii-Talks and Communications in national and international universities

-Seminario su invito presso l'Università degli Studi di Torino, dal titolo "The Mean Length Inequality: a Quantitative Estimate via Mass Transportation", in data 05/04/2023
-Seminario su invito presso l'Università degli Studi di Napoli, dal titolo "On some properties of the ground state of relativistic Schrodinger operators with spherical potential wells", in data 25/10/2022
-Seminario su invito presso l'Università degli Studi di Salerno, dal titolo "Bulk behaviour of ground states for relativistic Schrodinger operators with spherical potential well", in data 01/06/2022
-Seminario su invito presso l'Università La Sapienza di Roma, dal titolo "A Sojourn-Based Approach to Discrete-Time Semi-Markov Decision Processes", in data 11/05/2022
-Seminario su invito presso l'Università di Granada, in Spagna, dal titolo "Time-changed Fractional Ornstein-Uhlenbeck Process", in data 27/02/2020
-Seminario su invito presso l'Università di Cardiff, in Gran Bretagna, dal titolo "Asymptotic Behaviour of the Exit Time from Open Sets of some Semi-Markov Processes", in data 11/11/2019
-Seminario su invito presso l'Università degli Studi di Salerno, dal titolo "Una breve introduzione ai processi tempo-cambiati", in data 29/05/2019

Part VII.iii-Organizing activities for conferences and workshops

-Organizzatore di sessione su invito al "Fourth Italian Meeting on Probability", tenutosi a Roma, dal titolo "Non-local operators in probability", con 4 Relatori, in data 13/06/2024
-Organizzatore di sessione su invito al "10th International Workshop on Applied Probability", tenutosi a Salonicco, in Grecia, dal titolo "Fractional and nonlocal operators in applied probability", con 4 Relatori, in data 08/06/2023
-Organizzatore di sessione al "Third Italian Meeting on Probability and Mathematical Statistics", tenutosi a Bologna, dal titolo "Nonlocal operators in probability: anomalous diffusions", con 4 Relatori, in data 13/06/2022
-Organizzatore di sessione al "Third Italian Meeting on Probability and Mathematical Statistics", tenutosi a Bologna, dal titolo "Semi-Markov dynamics", con 4 Relatori, in data 14/06/2022

- Organizzatore di sessione al “Third Italian Meeting on Probability and Mathematical Statistics”, tenutosi a Bologna, dal titolo “Generalized fractional processes”, con 4 Relatori, in data 16/06/2022
-Organizzatore del workshop “Probability and NonLocal Operators 4”, con 6 Relatori, tenutosi a Napoli, in data 11/12/2023
-Membro del Comitato Organizzatore Locale del “Kick-off Meeting of the PRIN 2017 Project: Stochastic models for complex systems”, tenutosi telematicamente a causa della situazione di natura pandemica, nelle date 01/07/2020, 02/07/2020, 08/07/2020, 09/07/2020
-Membro del Comitato Organizzatore Locale del “Second Italian Meeting on Probability and Mathematical Statistics”, tenutosi a Vietri sul Mare, dal 17/06/2019 al 20/06/2019
-Organizzazione, per l’area MPHS, del ciclo di “Scientific Colloquia” della Scuola Superiore Meridionale, negli anni 2021/2022, 2022/2023 e 2023/2024.

Part VII.iv-Visiting Periods

-Periodo di Ricerca e Collaborazione Scientifica presso l’Università di Loughborough (con il Prof. Jozsef Lorinczi), in Gran Bretagna 07/10/2019–08/11/2019
-Periodo di Ricerca e Collaborazione Scientifica presso la School of Mathematics dell’Università di Cardiff (con il Prof. Nikolai Leonenko), in Gran Bretagna 11/11/2019–13/11/2019
-Periodo di Ricerca e Collaborazione Scientifica presso l’Università di Tolosa (con il Prof. Laurent Miclo), in Francia, 17/11/2019–21/11/2019
-Periodo di Ricerca e Collaborazione Scientifica presso l’Università di Granada (con il Prof. Francisco de Asis Torres Ruiz), in Spagna, 24/02/2020–28/02/2020

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers	41	Scopus	2018	2024
Books	1	Scopus	2023	2023

Total Impact factor*	64.221
Total Citations	229
Average Citations per Product	5.45
Hirsch (H) index	10
Normalized H index**	3.33

*****Total Impact Factor has been calculated, some papers have been removed in the calculation due to the fact that I was not able to find the IF on the reference year.
******H index divided by the academic seniority, where the academic seniority is calculated as the biggest integer number under the difference between the data of PhD thesis defense and the deadline of the current call.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1) G. Ascione, M. Savov and B. Toaldo, “Regularity and asymptotics of densities of inverse subordinators”, Accepted on Transactions of the London Mathematical Society, 2024, n. citations 0, IF 0.8 (2022, IF 2023 not yet available).

2) G. Ascione and J. Lőrinczi, “Bulk behaviour of ground states for relativistic Schrödinger operators with compactly supported potentials”, Annales Henri Poincare, 2023, n. citations 0, IF 1.5 (2022, IF 2023 not yet available).
3) G. Ascione, D. Castorina, and F. Solombrino, “Mean-field sparse optimal control of systems with additive white noise”, SIAM Journal on Mathematical Analysis, vol. 55, no. 6, pp. 6965–6990, 2023, n. citations 2, IF 3.1 (2022, IF 2023 not yet available)
4) G. Ascione and G. D’Onofrio. "Deterministic control of SDEs with stochastic drift and multiplicative noise: a variational approach." Applied Mathematics & Optimization 88.1, 11, 2023, n. citations 0, IF 1.8 (2022, IF 2023 not yet available)
5) G. Ascione, “A spherical rearrangement proof of the stability of a Riesz-type inequality and an application to an isoperimetric type problem”, ESAIM: Control, Optimisation and Calculus of Variations, vol. 28, 2022, n. citations 2, IF 1.4 (2022)
6) G. Ascione and J. Lőrinczi, “Potentials for non-local Schrödinger operators with zero eigenvalues”, Journal of Differential Equations, vol. 317, pp. 264–364, 2022, n. citations 7, IF 2.4 (2022)
7) G. Ascione, Y. Mishura and Enrica Pirozzi. "The Fokker–Planck equation for the time-changed fractional Ornstein–Uhlenbeck stochastic process." Proceedings of the Royal Society of Edinburgh Section A: Mathematics 152.4, pp. 1032-1057, 2022, n. citations 2, IF 1.3 (2022)
8) G. Ascione, “Abstract Cauchy problems for the generalized fractional calculus”, Nonlinear Analysis, vol. 209, p. 112 339, 2021, n. citations 17, IF 1.743 (2021)
9) G. Ascione, N. Leonenko, and E. Pirozzi, “Time-non-local Pearson diffusions”, Journal of Statistical Physiscs, vol. 183, no. 3, pp. 1–42, 2021, n. citations 8, IF 1.762 (2021)
10) G. Ascione, G. D’Onofrio, L. Kostal, and E. Pirozzi, “An optimal Gauss-Markov approximation for a process with stochastic drift and applications”, Stochastic Processes and their Applications, vol. 130, n.11, pp. 6481-6514 2020, n. citations 3, IF 1.467 (2020)
11) G. Ascione, N. Leonenko, and E. Pirozzi, “Fractional Erlang queues”, Stochastic Processes and their Applications, vol. 130, no. 6, pp. 3249–3276, 2020, n. citations 15, IF 1.467 (2020)
12) G. Ascione, E. Pirozzi, and B. Toaldo, “On the exit time from open sets of some semi-Markov processes”, Annals of Applied Probability, vol. 30, no. 3, pp. 1130–1163, 2020, n. citations 13, IF 1.872 (2020)
13) G. Ascione, “Probabilistic approach to non-local equations”, PhD Thesis (2021).

Tesi di Dottorato:
F. Concetti, The full replica symmetry breaking solution in mean field spin glass models. Relator Giorgio Parisi. Università di Roma Sapienza, dipartimento di Fisica, Scuola di Dottorato Vito Volterra. Dottorato di Ricerca in Fisica– XXXI Ciclo

Articoli pubblicati su rivista:

J. of Phys. A: Mathematical and Theoretical **50** (6), 2017. F. Concetti, The replica symmetric solution for orthogonally constrained Heisenberg model on Bethe lattice. doi:10.1088/1751-8121/aa54d2

J. of Stat. Phys. **173** (5), 2018. F. Concetti, The full replica symmetry breaking in the Ising spin glass on random regular graph. doi: 10.1007/s10955-018-2142-6

Articoli sottomessi su archive online (arXiv):

arXiv:1908.03820v1, 2019. F. Concetti, Properties of the full replica symmetry breaking free energy functional of the Ising spin glass on random regular graph. doi: 10.48550/arXiv.1908.03820

arXiv:2102.08110, 2021. F. Concetti and M. Chertkov, Message passing descent for efficient machine learning. doi: 10.48550/arXiv.2102.08110

arXiv:2401.08529, 2024. D. Belius, F. Concetti, and G. Genovese, On the determinant in bray-moore's tap complexity formula. doi:10.48550/arXiv.2401.08529

Data: 09/07/2024

Dr. Lorenzo Dello Schiavo

1. List of Publications

(0) **L. Dello Schiavo**, *Diffusions on Wasserstein Spaces*, PhD Thesis, Rhenische Friedrich-Wilhelms-Universität Bonn, 2020

(1) **L. Dello Schiavo**, L. Portinale, and F. Sau. Scaling Limits of Random Walks, Harmonic Profiles, and Stationary Non-Equilibrium States in Lipschitz Domains. *Ann. Appl. Probab.*, 34(2):1789–1845, 2024. doi:10.1214/23-AAP2007

(2) **L. Dello Schiavo**, J. Maas, and F. Pedrotti. Local Conditions for Global Convergence of Gradient Flows and Proximal Point Sequences in Metric Spaces. *Trans. Amer. Math. Soc.*, 377(6):3779–3804, 2024. doi:10.1090/tran/9156

(3) **L. Dello Schiavo**, E. Kopfer, and K.-T. Sturm. A Discovery Tour in Random Riemannian Geometry. *Potential Anal.*, 2024. doi:10.1007/s11118-023-10118-0

(4) **L. Dello Schiavo** and E. W. Lytvynov. A Mecke-type Characterization of the Dirichlet–Ferguson Measure. *Electron. Commun. Probab.*, 28:1–12, 2023. doi:10.1214/23-ECP528

(5) **L. Dello Schiavo** and M. Wirth. Ergodic Decompositions of Dirichlet Forms under Order Isomorphisms. *J. Evol. Equ.*, 23(9), 2023. 22 pp. doi:10.1007/s00028-022-00859-7

(6) T. Cremaschi and **L. Dello Schiavo**. Effective Contraction of Skinning Maps. *Proc. Amer. Math. Soc. B*, 9:445–459, 2022. doi:10.1090/bproc/134

(7) **L. Dello Schiavo**. The Dirichlet–Ferguson Diffusion on the Space of Probability Measures over a Closed Riemannian Manifold. *Ann. Probab.*, 50(2):591–648, 2022. doi:10.1214/21-AOP1541

(8) **L. Dello Schiavo** and K. Suzuki. Sobolev-to-Lipschitz Property on QCD-spaces and Applications. *Math. Ann.*, 384:1815–1832, 2022. 18 pp. doi:10.1007/s00208-021-02331-2

(9) **L. Dello Schiavo** and K. Suzuki. Rademacher-type theorems and Sobolev-to-Lipschitz properties for strongly local Dirichlet spaces. *J. Funct. Anal.*, 281(11):109234, dec 2021. 63 pp. doi:10.1016/j.jfa.2021.109234

(10) **L. Dello Schiavo**. Ergodic Decomposition of Dirichlet Forms via Direct Integrals and Applications. *Potential Anal.*, 58:573–615, 2023. 43 pp. doi:10.1007/s11118-021-09951-y

(11) **L. Dello Schiavo**. A Rademacher-type theorem on L^2-Wasserstein spaces over closed Riemannian manifolds. *J. Funct. Anal.*, 278(6):108397, 2020. 51 pp. doi:10.1016/j.jfa.2019.108397

(12) **L. Dello Schiavo**. Characteristic functionals of Dirichlet measures. *Electron. J. Probab.*, 24(115):1–38, 2019. doi:10.1214/19-EJP371

Vienna, July 9, 2024

Lorenzo Dello Schiavo

Francesco Iafrate

Curriculum Vitæ

Latest Position

July 2021 - June 2024 **Fellow Researcher (RTDA)**, *Sapienza University of Rome*, Department of Basic and Applied Sciences for Engineering (SBAI) .

Past Positions

Feb. 2020 - Jan. 2021 **Postdoctoral Research Assistant**, *Sapienza University of Rome*, Department of Statistical Sciences.
Research project: "Multiple penalties Bridge estimation and applications to Stochastic Differential Equations".

Visiting Periods

1 Dec. 2023 - 31 Mar. 2024 **Visiting scholar**, *Harvard University*, Institute for Quantitative Social Sciences.

27-29 Feb. 2024 **Visiting scholar**, *Fordham University of New York*, Department of Mathematics.

Education

2016 - 2020 **PhD, Methodological Statistics**, *Sapienza University of Rome*, Department of Statistical Sciences.
Advisor: prof. E. Orsingher. Thesis entitled "Functionals of drifted Brownian motion and tempered fractional equations"

2016 **M.Sc., Statistical Sciences**, *Sapienza University of Rome*.
Mark 110 cum laude/110
Thesis on “Fractional Telegraph Equation and related Stochastic Processes”.

2014 **B.Sc., Statistical Sciences**, *Sapienza University of Rome*.
Mark 110 cum laude/110
Thesis on “Lagrange Multipliers test”.

Research Interests

High-dimensional statistical learning problems for continuous time stochastic processes sampled at discrete times, quasi-likelihood methods and extensions of penalized estimation techniques.

Evolution problems associated to dynamical systems subject to a random environment. Semigroups and operators associated to random evolutions.

Time-changed Lévy processes and fields related to fractional differential equations. Study of the probabilistic effects produced by the introduction of different types of differential operators.

Publications

11. *Path dynamics of time-changed Lévy processes: a martingale approach*, with A. De Gregorio, *Journal of Theoretical Probability* (2024)
10. *Some families of random fields related to multiparameter Lévy processes*, with C. Ricciuti, *Journal of Theoretical Probability https://doi.org/10.1007/s10959-024-01351-3* (2024)
9. *Elastic drifted Brownian motions and non-local boundary conditions*, with M. D'Ovidio, *Stochastic Processes and their Applications*, **167**, 104228, (2024)
8. *Telegraph random evolutions on a circle*, with A. De Gregorio, *Stochastic Processes and their Applications*, **141**, 79–108 (2021)
7. *Regularized Bridge-type estimation with multiple penalties*, with A. De Gregorio, *Ann Inst Stat Math* **73**, 921–951, (2021)
6. *On the Fractional Wave Equation*, with E. Orsingher, *Mathematics*, **8**(6) (2020)
5. *On the sojourn time of a generalized Brownian meander*, with E. Orsingher, *Statistics and Probability Letters*, **168** (2021)
4. *Asymptotic results for the last zero crossing time of a Brownian motion with non-null drift*, with C. Macci, *Statistics and Probability Letters*, **166** (2020)
3. *Last zero crossing of an iterated Brownian motion with drift* , with E. Orsingher, *Stochastics* **92**, 356–378 (2020)
2. *Some results on the Brownian meander with drift*, with E. Orsingher, *Journal of Theoretical Probability*, **33**, 1034–1060 (2020)
1. *Drifted Brownian motions governed by fractional tempered derivatives* , with M. D'Ovidio and E. Orsingher, *Modern Stochastics: Theory and Applications*, **5**(4) 445–456 (2018)

Preprints and Working papers

Network Stochastic Differential Equations, with S. Iacus, *working paper*

Adaptive Elastic Net estimation for diffusion processes, with A. De Gregorio, D. Frisardi, S. Iacus *working paper*)

Pathwise optimization for adaptive Bridge-type estimators, with A. De Gregorio, *preprint* (2022)

Anomalous random flights and fractional run-and-tumble equations, with L. Angelani, A. De Gregorio, R. Garra, *arXiv:2404.15941* (2024)

Teaching Activity

Ph.D. courses.

April 2024 *Probability for Data Science* , Statistical Sciences Ph.D Programme, Sapienza University of Rome

June 2023 *Probability for Data Science*, Statistical Sciences Ph.D Programme, Sapienza University of Rome

Nov. 2022 *Statistical Learning for Stochastic Processes*, Statistical Sciences Ph.D Programme, Sapienza University of Rome

B. Sc. courses.

2022 - present *Probability*, Management Engineering, Sapienza University of Rome

2021 - present *Data Analysis for Business*, Management and Computer Science, LUISS University

2020 *Probability and Statistics*, Mechanical Engineering, Sapienza University of Rome

Probability, Management Engineering, Sapienza University of Rome

2018 Probability and Statistics, Mechanical Engineering, Sapienza University of Rome **Teaching Assistant**.

2019 Probability and Applications to Finance, Economics and Finance LUISS University

2018 *Probability and Statistics*, Computer Engineering, Sapienza University of Rome

Probability and Applications to Finance, Economics and Finance LUISS University

Probability, Sapienza University of Rome, Engineering and Management

2017 *Probability and Applications to Finance*, Economics and Finance, LUISS University

Probability, Management Engineering, Sapienza University of Rome

Probability and Statistics, Computer Engineering, Sapienza University of Rome

Languages

English: *Fluent* **French**: *Basic* **Italian**: *Mother Tongue*

Seminars

- *Path dynamics of time-changed Lévy processes*, Invited.
  4th Italian Meeting on Probability and Mathematical Statistics, June 10–14 2024, Rome
- *Elastic Net Estimation for diffusion processes*,
  DYNSTOCH 2024, May 22 2024, University Of Kiel
- *Regularized statistical problems for diffusion processes*, Invited.
  February 28 2024, Fordham University, New York City
- *Pathwise optimization for adaptive Bridge-type estimators: applications to SDEs*
  Invited.
  16th International Conference of the ERCIM WG on Computational and Methodological Statistics, December 16-18 2023, Berlin (hybrid)
- *Path dynamics of time-changed Lévy processes: a martingale approach*
  Workshop: Fractional Calculus, Special Functions and Applications, May 12, 2023, Rome
- *Some families of random fields related to multiparameter Lévy processes*
  Workshop: Probability and Non-Local Operators 3, December 2, 2022, Turin
- *Bridge-type estimation with mixed-rate asymptotics: applications to SDE's*
  Workshop: Mathematics for Artificial Intelligence and Machine Learning, November 24, 2022, Turin
- *Non-local boundary conditions and elastic drifted Brownian motions*
  Third Italian Meeting on Probability and Mathematical Statistics, June 13–16, 2022, Bologna
- *Porting the Yuima package to Python: difficulties and feasibility*, Invited.
  14th International Conference of the ERCIM WG on Computational and Methodological Statistics, December 18–20, 2021, London (online)
- *Tempered fractional derivatives and related drifted Brownian motions*
  Workshop: Probability and non-local operators, October 29, 2021, Rome

- *Tempered fractional derivatives and related drifted Brownian motions*
  International Conference on Fractional Differentiation and its Applications, 6-8 Settembre 2021, Varsavia (online)
- *Adaptive l^q penalized estimation for diffusion processes in Yuima package*
  Third Yuima Workshop, Brixen, *June 2019*.
- *Tempered fractional derivatives and related Brownian motions*
  Second Italian Meeting of Probability and Mathematical Statistics, Vietri sul Mare, *June 17-20, 2019*.

Reviewer

I served as referee for the follwing journals

- Stochastics and Dynamics, Methodology and Computing in Applied Probability, Journal of Probability and Statistics, Computational and Applied Mathematics, Mathematics, Metron.

Other Workshops, Conferences and Graduate Schools

- European Meeting of Statisticians - EMS 2019, Palermo *July 2019*.
- Bocconi Summer School in Advanced Statistics and Probability: Random Graphs and Complex Networks, Como *July 2019*.
- YUIMA Summer School on Computational and Statistical Methods for Stochastic Processes, Brixen, *June 2019*.
- 6th Workshop on Fractional Calculus, Probability and Non-Local Operators, Bilbao, *September 2018*.
- IST Austria Summer School in Probability and Mathematical Physics, Vienna, *June 2018*.
- First Italian Meeting of Probability and Mathematical Statistics, Turin, *June 2017*.

Research Projects and Grants

2023 *Anomalous Phenomena on Regular and Irregular Domains: Approximating Complexity for the Applied Sciences*, (Participant) PRIN 2022

2022 *Fractal and Fractional*, (Participant) "Fondi Ateneo 2022"

2018 *Stochastic models related to fractional porous medium equations*, (Participant) "Fondi Ateneo 2018"

Other Projects

ongoing **SDElearn**, *a Python package for SDE modeling*, Github project page: `https://github.com/fiafrate/sdelearn`.

Matteo Quattropani

Curriculum Vitæ

Contacts

Office,
Dipartimento di Matematica "Guido Castlnelnuovo", Sapienza Università di Roma,

Email,
Personal:
Institutional:

Current position

Postdoctoral researcher (IT: assegnista di ricerca), **Since 9/2022**
Sapienza Università di Roma, Roma, Italy,
Scientific Sector: MAT/06 Probability and Mathematical Statistics,
Project: Phase transitions in random loop models,
Host: Lorenzo Taggi.

Previous positions

Postdoctoral researcher, **9/2021 – 8/2022**
Leiden University, Leiden, The Netherlands,
Project: NETWORKS,
Hosts: Luca Avena.

Postdoctoral researcher (IT: assegnista di ricerca), **12/2019 – 8/2021**
Luiss, Roma, Italy,
Scientific Sector: MAT/06 Probability and Mathematical Statistics,
Project: Markov chains and games on networks,
Host: Marco Scarsini.

Education

PhD in Mathematics, cum laude, **4/2020**
Università degli studi Roma Tre, Roma, Italy,
Scientific Sector: MAT/06 Probability and Mathematical Statistics,
Thesis: "Mixing and cover times on sparse random digraphs".
Advisor: Pietro Caputo

MSc Applied Mathematics, grade: 9.1/10, summa cum laude, **6/2016**
Leiden University, Leiden, The Netherlands,
Thesis: "Spectral techniques of community detection: a probabilistic perspective".
Supervisors: Luca Avena and Diego Garlaschelli

BSc Applied Mathematics, grade: 106/110, **9/2013**
Sapienza Università di Roma, Roma, Italy,
Thesis: "Un modello stocastico per la dinamica dei prezzi spot dell'energia elettrica".
Supervisors: Rita Laura D'Ecclesia and Mauro Piccioni

Research interests

- Random walks on random graphs.
- Opinion dynamics and exchange models.
- Metastability.
- Mixing time of Markov chains.
- Games on networks and random games.
- Random forests and random loop soups.

Journal publications

The highlighted publications are those selected for the evaluation

Mixing trichotomy for an Ehrenfest urn with impurities,
M. Quattropani,
Electronic Communications in Probability, (to appear).

Coexistence, enhancements and short loops in random walk loop soups,
N. Forien, A. Quittman, M. Quattropani, L. Taggi,
Probability and Mathematical Physics, 5(3), 753–784, 2024.

Meeting, coalescence and consensus time on directed random graphs,
L. Avena, F. Capannoli, R. S. Hazra, M. Quattropani,
Annals of Applied Probability (to appear).
https://imstat.org/journals-and-publications/annals-of-applied-probability/annals-of-applied-probability-future-papers/

Best-Response dynamics in two-person random games with correlated payoffs,
H.A. Mimun, M. Quattropani, M. Scarsini,
Games and Economic Behaviour, 145, 239–262, 2024.

Discordant edges for the voter model on regular random graphs,
L. Avena, R. Baldasso, R. S. Hazra, F. Den Hollander, M. Quattropani,
ALEA Latin American journal of Probability and Mathematical Statistics, 21, 431–464, 2024.

Rankings in directed configuration models with heavy tailed in-degrees,
X. S. Cai, P. Caputo, G. Perarnau, M. Quattropani,
Annals of Applied Probability, 33(6B), 5613–5667, 2023.

On the meeting time of random walks on random DFA,
M. Quattropani, F. Sau,
Stochastic processes and their applications, 166, 104225, 2023.

Cutoff for the Averaging process on the hypercube and complete bipartite graphs,
P. Caputo, M. Quattropani, F. Sau,
Electronic Journal of Probability, 28, 1–31, 2023.

Mixing of the Averaging process and its discrete dual on finite-dimensional geometries,
M. Quattropani, F. Sau,
Annals of Applied Probability, 33(2), 1136–1171, 2023.

Phase-transition for k-majority on a biased communication model,
E. Cruciani, H. A. Mimun, M. Quattropani, S. Rizzo,
Distributed Computing, 36(2), 107–135, 2023.

Loop-erased partitioning of a graph: mean-field analysis,
L. Avena, A. Gaudillière, P. Milanesi, M. Quattropani,
Electronic Journal of Probability, 27, 1–35, 2022.

The Buck Passing Game,
R. Cominetti, M. Quattropani, M. Scarsini,
Mathematics of Operation Research, 47(3), 1731–1766, 2022.

The mixing time of PageRank surfers on sparse random digraphs,
P. Caputo, M. Quattropani,
Random Structures and Algorithms, 59, 3, 376–406, 2021.

A probabilistic proof of Cooper and Frieze's "First Visit Time Lemma",
F. Manzo, M. Quattropani, E. Scoppola,
ALEA Latin American journal of Probability and Mathematical Statistics, 18, 1739–1758, 2021.

Mixing time trichotomy in regenerating dynamic digraphs,
P. Caputo, M. Quattropani,
Stochastic Processes and their Applications, 137, 222–251, 2021.

Stationary distribution and cover time of sparse directed configuration models,
P. Caputo, M. Quattropani,
Probability Theory and Related Fields, 178, 1011–1066, 2020.

Conference proceedings

Phase-transition for k-majority on a biased communication model,
E. Cruciani, H. A. Mimun, M. Quattropani, S. Rizzo,
DISC 2020 (Brief Announcement), ICDCN 2021.

Efficiency of equilibria in random binary games,
M. Quattropani, M. Scarsini,
SAGT 2021 (Extended abstract).
Full version: `arXiv:2007.08518`

Preprints

Basins of attractions in two-player random ordinal potential games,
A. Collevecchio, H. A. Mimun, M. Quattropani, M. Scarsini,
preprint: `arxiv.org/abs/2407.05460`.

Teaching Experience

As lecturer

StAN I: Statistics for Astronomy and Physics students (EN), **Fall 2021**
Bachelor course in Astrophysics,
Leiden University.

Financial and Economic Networks (EN), **Fall 2020**
Jointly with: Hlafo A. Mimun,
Master course in Economics and Finance,
Luiss.

Gambling: Probability and Decision (EN), **Fall 2020**
Jointly with: Hlafo A. Mimun,
Bachelor course in Economics and Business,
Luiss.

Precorso di Probabilità (IT), **Summer 2018**
Introductory Master course in Corporate Finance,
Luiss.

Matlab (EN), **Fall 2017**
Video tutorial for the Master course in Corporate Finance,
Luiss.

As teaching assistant

Probabilità e Applicazioni alla Finanza (IT), **Fall 2023**
Lecturer: Hlafo A. Mimun,
Master course in Banking and Finance,
Luiss.

Gambling: Probability and Decision (EN), **Fall 2023**
Lecturer: Hlafo A. Mimun,
Bachelor course in Economics and Business,
Luiss.

Games and Strategies (EN), **Spring 2021**
Lecturers: Roberto Lucchetti, Valerio Dose,
Bachelor course in Economics and Business,
Luiss.

Games and Strategies (EN), **Spring 2020**
Lecturers: Roberto Cominetti, Roberto Lucchetti,
Bachelor course in Economics and Business,
Luiss.

Social Network Analysis (EN), **Fall 2019**
Lecturer: Marco Scarsini,
Bachelor course in Management and Computer Science,
Luiss.

Games and Strategies (EN), **Spring 2018**
Lecturer: Roberto Cominetti,
Bachelor course in Economics and Business,
Luiss.

Probabilità e statistica (IT), **Fall 2017**
Lecturer: Elisabetta Scoppola,
Bachelor/Master course in Civil Engineering,
Università degli studi Roma Tre.

Quantitative methods for finance (EN), **Fall 2017**
Lecturer: Alessio Sancetta,
Master course in Corporate Finance,
Luiss.

CP110: Calcolo delle probabilità 1 (IT), **Spring 2017**
Lecturer: Pietro Caputo,
Bachelor course in Mathematics,
Università degli studi Roma Tre.

MasterMath: Stochastic Processes (EN), **Spring 2016**
Lecturer: Flora Spieksma,
Master course in Mathematics,
Leiden University / Vrij Universiteit Amsterdam.

Talks, seminars and posters

4th Italian meeting in Probability and Mathematical Statistics, **06/2024**
Roma,
Title of the talk: *Mixing of the Averaging process on graphs and hypergraphs*.

Workshop: Kolmogorov meets Turing (6th edition), **05/2024**
Sapienza Università di Roma,
Title of the talk: *Mixing of the Averaging process on graphs and hypergraphs*.

UMI-PRISMA Webinar, **03/2024**
Online,
Title of the talk: *Incontri tra passeggiate aleatorie e dinamiche di opinione su grafi random*.

RoMaDs Seminar, **12/2023**
Università di Roma Tor Vergata, Italy,
Title of the talk: *Mixing of the Averaging process on graphs*.

SMAQ Seminar, **10/2023**
Università dell'Aquila, Italy,
Title of the talk: *Mixing of the Averaging process on graphs*.

Probability Seminar, **10/2023**
Università di Padova, Italy,
Title of the talk: *Mixing of the Averaging process on graphs*.

SPA 2023, **07/2023**
Lisbon, Portugal,
Title of the talk: *Voter model on random directed graphs*.

Workshop: Random Games, Probability and Machine Learning, **06/2023**
Monash University, Prato, Italy,
Title of the talk: *Mixing of the Averaging process on graphs*.

Workshop: Analysis and simulation of metastable systems, **04/2023**
CIRM, Luminy, France,
Title of the talk: *Quasi-stationary distributions without killing*.

Probability Seminar, **11/2022**
Sapienza Università di Roma, Italy,
Title of the talk: *Mixing of the Averaging process on graphs*.

Probability Seminar, **10/2022**
Stanford University, Palo Alto, CA, USA,
Title of the talk: *Mixing time of the Averaging process on finite dimensional geometries*.

Workshop: Large scale stochastic dynamics, **09/2022**
MFO, Oberwolfach, Germany,
Title of the talk: *Cutoff of the Binomial Splitting on finite dimensional geometries*.

Workshop: Francesca Romana Nardi – A life in probability, building communities across Europe, **07/2022**
Università di Firenze, Italy,
Title of the talk: *Exponential hitting times for rapidly mixing Markov chains*.

3rd Italian meeting in probability and mathematical statistics, **06/2022**
Università di Bologna, Italy,
Title of the talk: *Random walks on random DFA*.

1st UMI meeting for PhD students, **05/2022**
Università di Padova, Italy,
Title of the talk: *The stationary distribution of random walks on random directed graphs*.

DEF Departmental seminar, **03/2022**
Luiss, Rome, Italy,
Title of the talk: *Learning random automata using random walks*.

Oberwolfach meeting: The Cutoff Phenomenon for Finite Markov Chains, **11/2021**
MFO, Oberwolfach, Germany (online),
Title of the talk: *Mixing trichotomies: robustness of cutoff*.

Probability seminar, **11/2021**
Leiden University, Netherlands,
Title of the talk: *The stationary distribution of random walks on random directed graphs*.

NETWORKS Training Week, **10/2021**
Asperen, Netherlands,
Title of the talk: *A statistical-physics flavored model of network formation*.

14th International Symposium on Algorithmic Game Theory (SAGT 2021), **9/2021**
Aarhus, Denmark (Online),
Title of the talk: *Efficiency of equilibria in games with random payoffs*.

6th World Congress of the Game Theory Society (GAMES), **7/2021**
Budapest, Hungary (Online),
Title of the talk: *The Buck-Passing Game*.

DEF Departmental seminar, **3/2021**
Luiss, Rome, Italy (Online),
Title of the talk: *Some new results about PageRank on random directed graphs*.

PRIN Meeting: "ALGADIMAR", **12/2020**
Sapienza Università di Roma, Italy (Online),
Title of the talk: *Efficiency of equilibria in random binary games*.

Workshop: "Random polymers and networks", **9/2020**
IGESA, Iles de Porquerolles, France,
Title of the talk: *Cover time of sparse random digraphs*.

Young Researchers Seminar, **2/2020**
Università degli studi Roma Tre, Italy,
Title of the talk: *How fast does a PageRank surfer mix?*.

Probability seminar, **2/2020**
Università di Firenze, Italy,
Title of the talk: *How fast does a PageRank surfer mix?*.

Vienna Probability Seminar, **1/2020**
University of Vienna, Austria,
Title of the talk: *Trichotomy phenomena in the mixing of sparse digraphs*.

Workshop: "Spectra, Algorithms and Random Walks on Random Networks", **1/2020**
CIRM, Luminy, France,
Title of the talk: *Trichotomy phenomena in the mixing of sparse digraphs*.

Workshop: "Spectra, networks and random rooted forests", **11/2019**
Leiden University, Netherlands,
Title of the talk: *Loop-erased partitioning on mean-field models*.

Workshop: "MAPLE" (Markets, Algorithms, Prediction, and LEarning), **09/2019**
Politecnico di Milano, Italy,
Title of the talk: *The Buck-Passing Game*.

Workshop: "20 years of PoA", **07/2019**
Technical University of Crete, Greece,
Title of the poster: *Existence and Fairness of Equilibria in the Buck-Passing Game*.

2nd Italian Meeting on Probability and Mathematical Statistics, **06/2019**
Vietri sul Mare, Italy,
Title of the talk: *The Buck-Passing Game*.

Roma Tre PhD seminar, **02/2019**
Università degli studi Roma Tre, Italy,
Title of the talk: *A combinatorial perspective on potential games*.

Delft PhD seminar in Probability and Statistics, **01/2019**
TU Delft, Netherlands,
Title of the talk: *Loop-erased partitioning on mean-field geometries*.

Workshop: Kolmogorov Meets Turing (5th edition), **11/2018**
Luiss, Rome, Italy,
Title of the talk: *The Buck Passing Game*.

Probability Seminar, **09/2018**
Leiden University, Netherlands,
Title of the talk: *Cover time of random walks on sparse random digraphs*.

PRIN Meeting: "Large Scale Random Structures", **07/2018**
Università di Padova, Italy,
Title of the talk: *Cover time of random walks on sparse random digraphs*.

YEP XIV: "Networks: Probability, combinatorics and algorithm", **09/2017**
EURANDOM, Eindhoven, Netherlands,
Title of the talk: *Approximating networks spectra via random spanning forests*.

Grants

GNAMPA-INdAM Project 2020:
"Random walks in random games"
Coapplicant (PI: Marco Scarsini)

GNAMPA-INdAM Project 2019:
"Markov chains and games on networks"
Coapplicant (PI: Marco Scarsini)

Conference organization

- **2nd Italian Meeting of Probability and Mathematical Statistics (Vietri sul mare, 6/2019):** Organized session "Games and algorithms on networks"
- **3rd Italian Meeting of Probability and Mathematical Statistics (Bologna, 6/2022):** Organized session "Interacting particle systems"
- **18th Young European Probabilists meeting (Eindhoven, 3/2023):** on the topic "Random Matrices and related combinatorial problems"
- **4th Italian Meeting of Probability and Mathematical Statistics (Roma, 6/2024):** Organized session "Percolation"

Other activities

Thesis supervision

Roberto Calò, "Community detection algorithms for network data: a Markovian approach", Master in Economics and Finance, Luiss, 07/2022

Academic activities

Degree Committee for the Master in Economics and Finance, **7/2022**
LUISS Guido Carli.

PhD Committee, **1/2024**
Università degli Studi Roma Tre,
Candidate: Davide Ciaccia (PhD in Mathematics XXXV cycle).

Editorial activity

- **Referee reviewer (journals):** ALEA Latin American journal of Probability and Mathematical Statistics, Annales de l'Institut Henri Poincaré, Annals of Probability, Annals of Applied Probability, Electronic Comminications in Probability, Electronic Journal of Probability, IEEE Transactions on Information Theory, International Journal of Game Theory, Journal of Applied Probability, Random Structures and Algorithms.
- **Referee reviewer (conferences):** WINE 2019, EC 2020, STOC 2022.

Research visits

Visiting Postdoc, **10/2022**
Simons Institute for the Theory of Computing, Berkeley, CA, USA,
Program: Graph limits and processes on networks: from epidemics to misinformation.

Short research visits,
Leiden University (visiting L. Avena)
Université Aix-Marseille (visiting A. Gaudillière)
ISTA (visiting F. Sau)
Università di Trieste (visiting F. Sau)
Université Paris Dauphine (visiting J. Salez).

Memberships

GNAMPA-INdAM (Analisi Reale, Teoria della Misura e Probabilità)

July 12th, 2024

FEDERICO SAU

Date and place of birth: .

CONTACT INFORMATION

University of Trieste (UniTS)
Department of Mathematics, Computer Science and Geosciences

ACADEMIC POSITIONS

UniTS | Trieste, Italy
Non-tenured Assistant Professor (RTD-a | 01/A3 | MAT/06) 01/2023–present

Institute of Science and Technology Austria (ISTA) | Klosterneuburg, Austria
Lise Meitner Postdoctoral Fellow (PI of project M 3211) 11/2021–12/2022
ISTplus Postdoctoral Fellow (sponsor: Jan Maas) 11/2019–10/2021

EDUCATION

TU Delft | Delft, the Netherlands
PhD in Mathematics (advisor: Frank Redig) 10/2015–09/2019

Università degli Studi di Milano | Milan, Italy
MSc in Mathematics (*Cum Laude*) 10/2013–09/2015
BSc in Mathematics (*Cum Laude*) 10/2010–09/2013

Leiden Universiteit | Leiden, the Netherlands
Erasmus study exchange 09/2014–07/2015

GRANTS, FELLOWSHIPS & SCHOLARSHIPS

2023 **UniTS Microgrants 2022** (€5.000)
2021 **Lise Meitner Fellowship** (€164.080)
2019 **ISTplus Fellowship** (€105.000)
2017 **LabEx CARMIN Scholarship** (€3.000)

RESEARCH PROJECTS

UniTS Microgrants 2022 (Project Leader) 04/2023–03/2025
Universality in stochastic models of opinion dynamics

Lise Meitner Programme (Project Leader) 11/2021–12/2022
Project M 3211: *Reaching consensus in heterogeneous random opinion dynamics*

NWO-TOP Research Grant (Research Team Member) 01/2016–10/2019
TOP-1 grant 613.001.552: *Large deviations and gradient flows: beyond equilibrium*

PREPRINTS & PUBLICATIONS

Submitted preprints

1. Tiny fluctuations of the averaging process around its degenerate steady state. *arXiv.2403.02032*
2. Fractional kinetics equation from a Markovian system of interacting Bouchaud trap models. (with A. Chiarini, S. Floreani & F. Redig) *arXiv.2302.10156*

Published & accepted papers

1. From quenched invariance principle to semigroup convergence with applications to exclusion processes. (with S. Floreani & A. Chiarini) **Electron. Commun. Probab.** (to appear)
2. Full Γ-expansion of reversible Markov chains level two large deviations rate functionals. (with C. Landim & R. Misturini) **Ann. Appl. Probab.** (to appear) *arXiv.2303.00671*
3. Concentration and local smoothness of the averaging process. **Electron. J. Probab.** 29:1–26 (2024)
4. Spectral gap of the symmetric inclusion process. (with S. Kim) **Ann. Appl. Probab.** (to appear) *arXiv.2303.16607*
5. Scaling limits of random walks, harmonic profiles, and stationary non-equilibrium states in Lipschitz domains. (with L. Dello Schiavo & L. Portinale) **Ann. Appl. Probab.** 34(2):1789–1845 (2024)
6. Cutoff for the Averaging process on the hypercube and complete bipartite graphs. (with P. Caputo & M. Quattropani) **Electron. J. Probab.** 28(100):1–31, 2023
7. On the meeting of random walks on random DFA. (with M. Quattropani) **Stochastic Process. Appl.** 166(140225):1–33, 2023
8. Mixing of the Averaging process and its discrete dual on finite-dimensional geometries. (with M. Quattropani) **Ann. Appl. Probab.** 33(2):937–971, 2023
   (with a mention on D. Aldous' open research problems page)
9. Symmetric inclusion process with slow boundary: hydrodynamics and hydrostatics. (with C. Franceschini & P. Gonçalves) **Bernoulli** 28(2):1340–1381, 2022
10. Orthogonal polynomial duality of boundary driven particle systems and non-equilibrium correlations. (with S. Floreani & F. Redig) **Ann. Inst. Henri Poincaré Probab. Stat.** 58(1):220–247, 2022
11. Hydrodynamics for the partial exclusion process in random environment. (with S. Floreani & F. Redig) **Stochastic Process. Appl.** 142:124–158, 2021
12. Higher order hydrodynamics and equilibrium fluctuations of interacting particle systems. (with J.P. Chen) **Markov Processes Relat. Fields** 27(1):339–380, 2021
13. Symmetric simple exclusion process in dynamic environment: hydrodynamics. (with F. Redig & E. Saada) **Electron. J. Probab.** 25(138):1–47, 2020
14. Stochastic duality and eigenfunctions. (with F. Redig) *Stochastic dynamics out of equilibrium*, 621–649, **Springer Proc. Math. Stat.**, 282, Springer, Cham, 2019
15. Factorized duality, stationary product measures and generating functions. (with F. Redig) **J. Stat. Phys.** 172(4):980–1008, 2018
16. Generalized immediate exchange models and their symmetries. (with F. Redig) **Stochastic Process. Appl.** 127(10):3251–3267, 2017
17. Duality and stationary distributions of the "Immediate Exchange Model" and its generalizations. (with B. van Ginkel & F. Redig) **J. Stat. Phys.** 163(1):92–112, 2016

SCIENTIFIC COLLABORATORS (IN ALPHABETICAL ORDER)

Pietro Caputo (*RomaTre*); Joe P. Chen (*Colgate University*); Alberto Chiarini (*Padova*); Lorenzo Dello Schiavo (*ISTA*); Simone Floreani (*Bonn*); Chiara Franceschini (*Modena*); Bart van Ginkel (*TU Delft*); Patrícia Gonçalves (*IST Lisbon*); Seonwoo Kim (*KIAS*); Claudio Landim (*IMPA*), Ricardo Misturini (*UFRGS*); Lorenzo Portinale (*Bonn*); Matteo Quattropani (*Sapienza*); Frank Redig (*TU Delft*); Ellen Saada (*Paris*)

LONG-TERM RESEARCH VISITS

Instituto de Matemática Pura e Aplicada (IMPA) | Rio de Janeiro, Brazil 11/2022–12/2022
Visiting Researcher (host: Claudio Landim | duration: six weeks)

Institut Henri Poincaré (IHP) | Paris, France
Visiting Researcher (trimester: *Stochastic Dynamics Out of Equilibrium*) 04/2017–07/2017

SHORT-TERM RESEARCH VISITS

2024 One-week stay, hosted by Pietro Caputo @ Università Roma Tre
2023–2024 Two one-week stay, hosted by Alberto Chiarini @ *Università di Padova*
2023 One two-week stay, hosted by Ellen Saada & Assaf Shapira @ *MAP5, Paris*
2019–2023 Five one-week stays, hosted by Matteo Quattropani @ *Universitá Roma Tre*
2023 One-week research stay, hosted by Simone Floreani @ *University of Oxford*
2019–2022 Two one-week research stays, hosted by Simone Floreani @ *TU Delft*
2022 One-week research stay @ *CRM, Université de Montréal*
2019–2020 Two one-week stays, hosted by Patrícia Gonçalves @ *Instituto Superior Técnico*
2018 Three one-week stays, hosted by Marco Formentin @ *Università di Padova*
2017–2018 Two one-week stays, hosted by Ellen Saada @ *MAP5, Paris*

TEACHING

UniTS

2024 **Lecturer**
Probabilità e Statistica Matematica I (BSc course in Maths, 6 ECTS)
2023 **Lecturer**
Probabilità e Statistica (BSc course in Maths, 6 ECTS)

ISTA

2022 **Lecturer** (co-lecturer: Lorenzo Dello Schiavo)
Introduction to Gaussian Free Fields (graduate course, 3 ECTS)
2021 **Teaching Assistant**
Concentration of Measures (graduate course, 3 ECTS)

TU Delft

2017 **Teaching Assistant**
Analysis and Differential Equations (BSc course)
2017 **Teaching Assistant**
Linear Algebra and Differential Equations (BSc course)
2016 **Teaching Assistant**
Analysis and Differential Equations (BSc course)
2016 **Teaching Assistant**
Linear Algebra and Differential Equations (BSc course)

INVITED LECTURES

05/2022 **Junior Trimester Program** *Stochastic modelling in the life science* @ *HIM* | Bonn, Germany
Three-hour course: *Duality, symmetric IPS, and their stationary non-equilibrium states*

INVITED TALKS IN CONFERENCES, WORKSHOPS & SEMINARS (SELECTION)

09/2025 Interacting particle systems and related fields @ *CIRM* | Luminy, France (upcoming)
09/2024 Rencontres de Probabilités 2024 | Rouen, France (upcoming)
08/2024 Intertwining b/w Probability, An. & Stat. Phys. @ *NUS IMS*, Singapore (upcoming)
05/2024 Seminario di Probabilità @ *Università Roma Tre* | Rome, Italy
01/2024 KIAS Analysis, PDE & Probability Seminar @ *KIAS* | Seoul, South Korea (online)
09/2023 Séminaire de Probabilités du MAP5 @ *Université Paris Cité* | Paris, France
06/2023 Seminars in Probability and Finance @ *University of Padova* | Padova, Italy
06/2023 Probability Seminars @ *Sapienza University of Rome* | Rome, Italy
05/2023 Seminário de Probabilidade e Mecânica Estatistica @ *IMPA, IST Lisboa,* etc. (online)
04/2023 Applied Probability Seminar @ *University of Warwick* | Warwick, UK
04/2023 Stochastic Analysis Internal Seminar @ *University of Oxford* | Oxford, UK
12/2022 Recent Developm.s in Stochastic Duality @ *Eurandom* | Eindhoven, the Netherlands
06/2022 3rd Italian Meeting on Probability and Math. Stat. | Bologna, Italy
Invited talk in parallel session: *Interacting particle systems*
06/2022 Not so Informal Probability Seminar @ *Universität Wien* | Vienna, Austria
11/2021 Probability and Stochastic Processes Seminar @ *Univ. Tennessee* | Knoxville, USA
07/2021 Encontro Nacional SPM 2021 (ENSPM2021) | Lisbon, Portugal
Invited talk in parallel session: *Stochastic duality for Markov processes*
06/2021 PDE Afternoon | Vienna, Austria
03/2021 SMAQ Seminars | L'Aquila, Italy
02/2021 Probability Seminar @ *UCD* | Dublin, Ireland
10/2020 Stochastics Seminars @ *ISTA* | Klosterneuburg, Austria
02/2020 Seminários de Probabilidades @ *Instituto Superior Técnico* | Lisbon, Portugal
11/2019 Vienna Probability Seminar | Vienna, Austria
06/2019 2nd Italian Meeting on Probability and Math. Stat. | Vietri sul Mare, Italy
Invited talk in parallel session: *Stochastic processes with interaction*
04/2019 Seminario di Probabilità @ *Università degli Studi di Padova* | Padova, Italy
03/2019 An Afternoon in Analysis and Probability @ *TU Delft* | Delft, the Netherlands
02/2019 Seminários de Probabilidades @ *Instituto Superior Técnico* | Lisbon, Portugal
10/2018 Most Informal Probability Seminars @ *Leiden University* | Leiden, the Netherlands
09/2018 Rencontres de Probabilités 2018 | Rouen, France
06/2018 Mark Kac Seminar | Utrecht, the Netherlands
05/2018 Seminar Series in Probability and Statistics, *TU Delft*, Delft, the Netherlands
08/2017 Genealogies of Interacting Particle Systems | *NUS IMS*, Singapore
09/2017 Rencontres de Probabilités 2017 | Rouen, France
04/2017 Young Researchers' Seminar @ *IHP* | Paris, France

INVITED CONTRIBUTIONS IN CONFERENCES & WORKSHOPS

10/2022 **Oberwolfach Arbeitsgemeinschaft**: *Quantitative Stochastic Homogenization*
Joint lecture with M. Barchiesi
09/2022 **Oberwolfach Workshop**: *Large Scale Stochastic Dynamics*
Joint talk with M. Quattropani
03/2022 **IPS and Hydrodynamic Limits** | *CRM*, Montréal, Canada
Short talk speaker
2021 **Oberwolfach Seminar**: *The Cutoff Phenomenon for Finite Markov Chains* (online)
Short talk

CONTRIBUTED TALKS IN CONFERENCES & WORKSHOPS

08/2021 **International Congress on Math. Phys. (ICMP 2021)** | Geneva, Switzerland
Short talk in thematic session: *Nonequilibrium Statistical Mechanics*

ORGANIZATION OF SEMINARS

2023–present Probability Seminars @ *UniTS* | Trieste, Italy
2016–2019 PhD Seminar in Probability and Statistics @ *TU Delft* | Delft, the Netherlands
04–07/2017 Young Researchers' Seminar @ *IHP* | Paris, France

ORGANIZATION OF WORKSHOPS & SESSIONS

09/2024 **Conference** @ UniTS | Trieste, Italy (upcoming)
PSPDE XII *Particle Systems and Partial Differential Equations*
06/2024 **Invited Session**, *4th Italian Meeting on Probability and Math. Stat.* | Rome, Italy
Mixing times
06/2022 **Session**, *3rd Italian Meeting on Probability and Math. Stat.* | Bologna, Italy
Scaling limits, criticality, and random media in statistical physics
08/2021 **Workshop** @ *Eurandom* | Eindhoven, the Netherlands
YEP XVII *Interacting Particle Systems*
06/2019 **Session**, *2nd Italian Meeting in Probability and Math. Stat.* | Vietri sul Mare, Italy
Phase transition and particle systems

ATTENDANCE OF CONFERENCES, WORKSHOPS & SCHOOLS (SELECTION)

11/2023 An Autumn Day in Probability and Stat. Phys. @ *University of Florence* | Firenze, Italy
11/2023 Particle Systems and PDEs XI @ *Instituto Superiore Técnico* | Lisbon, Portugal
04/2023 A Spring Day in Probability and Stat. Phys. @ *University of Florence* | Firenze, Italy
12/2022 Recent Developments in Stochastic Duality @ *Eurandom* | Eindhoven, the Netherlands
10/2022 Oberwolfach Aribeitsgemeinschaft: *Quantitative Stochastic Homogenization*
09/2022 Oberwolfach Workshop: *Large Scale Stochastic Dynamics*
06/2022 3rd Italian Meeting on Probability and Math. Stat. | Bologna, Italy
05/2022 Stochastic modelling in the life sciences @ *HIM* | Bonn, Germany
03/2022 IPS and Hydrodynamic Limits @ *CRM* | Montréal, Canada
11/2021 Oberwolfach Seminar: *The Cutoff Phenomenon for Finite Markov Chains* (online)
08/2021 International Congress on Math. Phys. (ICMP 2021) | Geneva, Switzerland (online)
07/2021 Encontro Nacional SPM 2021 (ENSPM2021) | Lisbon, Portugal (online)
06/2021 Particle Systems and PDEs IX | Braga, Portugal (online)
12/2019 Particle Systems and PDEs VIII @ *Instituto Superiore Técnico* | Lisbon, Portugal
06/2019 Phase transitions and Particle Systems @ *WIAS* | Berlin, Germany
04/2019 Pop. Dynamics and Stat. Phys. in Synergy II @ *Centro "E. De Giorgi"* | Pisa, Italy
02/2019 Taming Complexity in PDEs @ *Universität Wien* | Vienna, Austria
11/2018 Particle Systems and PDEs VII @ *Università degli Studi di Palermo* | Palermo, Italy
07/2018 Geometry and Scaling of Random Structures @ *UBA* | Buenos Aires, Argentina
08/2017 Genealogies of Interacting Particle Systems @ *IMS* | Singapore
07/2017 Spectral Properties of Large Random Objects @ *IHES* | Paris, France
07/2017 Stochastic Dynamics Out of Equilibrium @ *IHP* | Paris, France
03/2016 Variational Structures & LDP for IPS & PDE @ *Eurandom* | Eindhoven, the Netherlands
03/2016 YEP XIII *Large Deviations for IPS and PDEs* @ *Eurandom* | Eindhoven, the Netherlands
01/2016 Non-Equilibrium: Physics, Stochastics and Dyn. Syst. @ *CIRM* | Luminy, France

PEER-REVIEWING

Scientific Journals *Probability Theory and Related Fields* (PTRF) | *Annals of Applied Probability* (AAP) | *Annales de l'Institut Henri Poincaré (B) Probab. Stat.* (AIHP) | *Electronic Journal of Probability* (EJP) | *Journal of Statistical Physics* (JSP) | *ALEA Latin American Journal of Probability and Mathematical Statistics* (ALEA) | *Discrete and Continuous Dynamical Systems* (DCDS) | *Operations Research* (OR) | *Symmetry, Integrability and Geometry: Methods and Applications* (SIGMA) | *Mathematical Physics, Analysis and Geometry* (MPAG) | *Communications in Algebra* (CA)

MathSciNet MR4341080; MR4456130; MR4555283

THESIS SUPERVISION

UniTS

07/2024 **Carlo De Ambroggio** *On the varentropy criterion for Markov chains' cutoff* (MSc thesis)
07/2024 **Alessandro Isgrò** *Il grafo aleatorio di Erdös-Renyi* (BSc thesis)
07/2024 **Vittoria Pinzi** *Teoria dei giochi e applicazioni* (BSc thesis)

SERVICE

UniTS

06/2024 **Lecture for national-level maths olympiad high-school students**
La matematica delle transizioni di fase

2023–NOW **Member of CRMCS**
Department delegate for the University Research Center
on Migrations and International Cooperation for Sustainable Development

LANGUAGES

ITALIAN (Mother tongue), ENGLISH (Fluent), FRENCH, DUTCH, GERMAN (Basic)

Last updated: July 13, 2024

Tutto quanto qui dichiarato corrisponde a verità, ai sensi degli articoli 46 e 47 del D.P.R. 445 del 2000

Anna Vidotto

Curriculum Vitae

Posizioni accademiche

- Dal 30 dicembre 2021: Ricercatrice a tempo determinato di cui all'articolo 24, comma 3, lettera a), Legge 240 del 2010 (RTD-A) in Probabilità e Statistica Matematica (MAT/06) presso il Dipartimento di Matematica e Applicazioni dell'Università di Napoli Federico II;

- febbraio 2020 - dicembre 2021: Ricercatrice a tempo determinato di cui all'articolo 24, comma 3, lettera a), Legge 240 del 2010 (RTD-A) in Probabilità e Statistica Matematica (MAT/06) presso il Dipartimento di Economia dell'Università "G. D'Annunzio" Chieti-Pescara;

- febbraio 2019 - gennaio 2020: Assegnista di Ricerca presso il Dipartimento di Matematica dell'Università di Roma Tor Vergata, nel gruppo di ricerca di Domenico Marinucci.

Formazione

- Dottorato di Ricerca in Matematica conseguito con votazione massima (*excellent*) presso l'Università del Lussemburgo, Facoltà di Scienze, Tecnologia e Comunicazione. Tesi: *New probabilistic approximations for non-linear functionals of random fields and random measures*, ottenuto e svolto sotto la supervisione del professor Giovanni Peccati, 29 novembre 2018.
- Laurea Magistrale con lode in Matematica Pura e Applicata, Facoltà di Scienze Matematiche, Fisiche e Naturali, Università di Roma Tor Vergata. Tesi: *Fourth Moment Theorems by Stein-Malliavin techniques and Markov generator theory*, relatore: Prof. Domenico Marinucci, 22 ottobre 2015.
- Laurea Triennale con lode in Statistica, Economia e Finanza, Dipartimento di Scienze Statistiche, Facoltà di Tecnologia dell'Informazione, Informatica e Statistica, Università di Roma La Sapienza, luglio 2012. Tesi: *State Space representations of DSGE models and Structural VARs*, relatore: Prof. Massimo Franchi, 19 luglio 2012.

Interessi di ricerca Teoria della Probabilità e Statistica Matematica. In particolare:

- Approssimazioni probabilistiche tramite tecniche di Stein-Malliavin e metodi correlati;
- Proprietà geometriche dei campi aleatori su varietà;
- Proprietà statistiche dei campi aleatori sfera-per-tempo.

Pubblicazioni

1. M. Notarnicola, G. Peccati, A. Vidotto. Functional Convergence of Berry's Nodal Lengths: Approximate Tightness and Total Disorder, *Journal of Statistical Physics* 190, Article number: 97, 2023

2. A. Vidotto. Random Lipschitz-Killing Curvatures: Reduction Principles, Integration By Parts And Wiener Chaos, Special issue on the Theory and Applications of Random Fields dedicated to the 90th birthday of Professor M. Yadrenko, Journal: Theory of Probability and Mathematical Statistics, vol. 106, 157-175, 2022

3. D. Marinucci, M. Rossi, A. Vidotto. Non-Universal Fluctuations of the Empirical Measure for Isotropic Stationary Fields on S^2 x R, *The Annals of Applied Probability*, vol. 31, no.5, 2311-2349, 2021

4. A. Vidotto. A Note on the Reduction Principle for the Nodal Length of Planar Random Waves, *Statistics and Probability Letters*, vol. 174, July 2021

5. A. Caponera, C. Durastanti, A. Vidotto. LASSO estimation for spherical autoregressive processes, *Stochastic Processes and their Applications*, vol. 137, 167-199, July 2021

6. G. Peccati, A. Vidotto. Gaussian Random Measures Generated by Berry's Nodal Sets, *Journal of Statistical Physics*, vol. 178, no. 4, 996-1027, 202

7. A. Vidotto. An improved second order Poincaré inequality for functionals of Gaussian fields, *Journal of Theoretical Probability*, vol. 33, no. 1, 396-427, 2020

8. C. Döbler, A. Vidotto, G. Zheng. Fourth moment theorems on the Poisson space in any dimension, *Electronic Journal of Probability* 2018, vol. 23, paper no. 36, 1-27

...in fase di pubblicazione:

9. D. Marinucci, M. Rossi, A. Vidotto. Fluctuations of Level Curves for Time-Dependent Spherical Random Fields, preprint arXiv:2207.13028, *presto su Annales Henri Lebesgue,* 2024+

10. C. Macci, M. Rossi, A. Vidotto. Non-Universal Moderate Deviation Principle for the Nodal Length of Arithmetic Random Waves, preprint arXiv:2206.15108, *presto su ALEA Journal,* 2024+

Preprint

11. A.Caponera, D. Marinucci, A. Vidotto. MultiScale CUSUM Tests for Time-Dependent Spherical Random Fields, preprint arXiv:2305.01392, 2023
12. G. Ascione, A. Vidotto. Time Changed Spherical Brownian Motions with Longitudinal Drifts, preprint arXiv:2403.05202, 2024

Finanziamenti per la ricerca

- INdAM - GNAMPA per il progetto *Geometria di Onde Aleatorie su Varietà,* PI: A.P. Todino, 2024
- INdAM - GNAMPA per il progetto *Geometria stocastica e campi aleatori,* PI: C. Durastanti, 2020
- Fondi MIUR di Dipartimento di Eccellenza assegnati al Dipartimento di Matematica, Università di Roma "Tor Vergata", CUP E83C18000100006, 2018-2022 (questo progetto ha finanziato l'assegno di ricerca presso l'Università Tor Vergata nel 2019/2020)
- FNR Luxembourg - progetto di tipo AFR dal titolo *High-dimensional challenges and non-polynomial transformations in probabilistic approximations (HIGH-NPOL),* 2015-2018

Esperienza didattica

Corsi AA 2022/2023

- *Complementi di Probabilità e Statistica Matematica* (titolare del corso – in italiano, 6 CFU). Laurea Magistrale in Matematica, Università di Napoli Federico II.

Corsi AA 2022/2023

- *Complementi di Probabilità e Statistica Matematica* (tutor – in italiano, 24 ore). Laurea Magistrale in Matematica, Università di Napoli Federico II. Corso tenuto dalla Prof. Enrica Pirozzi.

Corsi AA 2019/2020

- *Analisi Matematica* (titolare del corso – in italiano, 6 CFU). Laurea Triennale in Economia e Finanza, Università degli Studi "G. D'Annunzio" Chieti-Pescara.
- *Geometria per il Design* (titolare del corso – in italiano, 4 CFU). Laurea in Design, Università degli Studi "G. D'Annunzio" Chieti-Pescara.
- *Matematica Generale* (tutor – in italiano, 24 ore). Laurea Triennale in Economia e Finanza, Università di Roma Tor Vergata. Corso tenuto dal Prof. Stefano Viaggiu.

Corsi AA 2017/2018

- *Analysis 1* (tutor – in inglese, 24 ore). Laurea Triennale in Ingegneria e Fisica, Università del Lussemburgo. Corso tenuto dal Prof. Hugo Parlier

Corsi AA 2016/2017

- *Analysis 1* (tutor – in inglese, 24 ore). Laurea Triennale in Ingegneria e Fisica, Università del Lussemburgo. Corso tenuto dal Prof. Philippe Bonneau
- Analysis 2 (tutor – in inglese, 24 ore). Laurea Triennale in Ingegneria e Fisica, Università del Lussemburgo. Corso tenuto dal Prof. Jean-Marc Schlenker

Corsi AA 2015-2016

- *Analysis 2* (tutor – in inglese, 24 ore). Laurea Triennale in Ingegneria e Fisica, Università del Lussemburgo. Corso tenuto dal Prof. Jean-Marc Schlenker

Compiti organizzativi

- Organizzatrice della sessione *Probabilistic approximations via chaotic decompositions* alla conferenza *Third Italian meeting on Probability and Mathematical Statistics*, Bologna, 13-16 giugno 2022;
- Organizzatrice della prima edizione del Math Career Day presso il Dipartimento di Matematica dell'Università di Roma Tor Vergata, 1 marzo 2019;
- Organizzatrice dei seminari di Probabilità e Statistica Matematica per il Dipartimento di Matematica dell'Università di Roma Tor Vergata, da febbraio 2019 a gennaio 2020;
- Organizzatrice della sessione *New applications of the Stein-Malliavin method for Gaussian approximation* alla conferenza *Second Italian meeting on Probability and Mathematical Statistics*, Vietri sul Mare, 17-21 giugno 2019
- Referee per le seguenti riviste: *Statistics and Probability Letters*, *Electronic Journal of Statistics*, *Stochastic Processes and their Applications, Journal of Computational and Applied Mathematics*

Selezione di inviti a tenere conferenze/seminari

- *Fourth Italian meeting on Probability and Mathematical Statistics, Roma, June 10th-14th 2024*
- *Webinars of the UMI group PRISMA (PRobability In Statistics, Mathematics and Applications), May 6th 2024*
- *Geometric and Topological Properties of Random Algebraic Varieties*, University of Cologne, October 4th-6th 2023
- *XXII Congresso UMI*, University of Pisa, September 4th-8th
- *Probability Seminar of the Department of Statistical Sciences*, University of Rome La Sapienza, June 23rd 2023
- *Random Nodal Domains*, University of Rennes, June 5th-9th 2021
- *Stochastic Models for Complex Systems 2023*, Lecce, May 18th-19th 2023
- *Third Italian meeting on Probability and Mathematical Statistics*, Bologna, June 13th-16th 2022
- *Probability Seminar*, University of Padua, May 25th 2022
- *Statistics Seminar*, Trinity College Dublin, April 6th 2022
- *Probability Seminar*, University of Padua, May 25th 2022
- *Third Italian meeting on Probability and Mathematical Statistics*, Bologna, June 13th-16th 2022
- *YAMC - Young Applied Mathematicians Conference, Santa Maria di Leuca, Italy, September 13th-17th 2021*
- *Conference - Geometry of Random Nodal Domains*, University of Rennes, September 6th-10th 2021
- *Second Italian meeting on Probability and Mathematical Statistics*, Vietri sul Mare, June 17th-21st 2019
- Young Mathematicians Symposium of the Greater Region, INRIA, Nancy, September 24th-25th 2018

- RTG 2131 Workshop: *Stein's method and Malliavin calculus, recent developments and future perspectives*, Ruhr Universität Bochum, December 6th-7th 2017
- *First Italian meeting on Probability and Statistical Mathematics*, Turin, June 19th-22nd 2017

Partecipazione a conferenze e scuole

- German Probability and Statistics Days 2016, Bochum (Germany), March 1st-4th, 2016
- 46th Probability Summer School Saint-Flour (France), July 3rd – 15th 2016
- 9th Probability Summer School in Ghiffa (Italy), organized by Prof. Peter Eichelsbacher, September 20th-27th 2016
- The Mathematics of Disorder, University of Bonn, October 4th-8th 2016
- Random matrices and their applications, Kyoto University, May 21st-25th 2018
- Spring Probability Workshop, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, June 4th-8th 2018
- Random Waves in Oxford, University of Oxford, June 18th-22nd 2018
- 4th Barcelona Summer School on Stochastic Analysis: a 2018 EMS Summer School, Centre de Recerca Matemàtica, Bellaterra (Barcelona), Spain, July 9th-13th 2018
- Recent Advances in Random Processes – a conference in honor of Paolo Baldi's 70th birthday, Rome, September 10th-11th 2018
- Mathematical Models and Methods in Earth and Space Science**,** Department of Mathematics, University of Rome Tor Vergata, March 19th-22nd 2019
- Recent Trends in Stochastic Analysis and SPDEs, Department di Mathematics, University of Pisa, July 18th-20th 2019
- Conference on random nodal sets, University of Rennes 1, Sept. 9th-13th 2019

Lingue Italiano (madreligua), inglese (livello C1), francese (livello B1).