

CURRICULUM VITÆ*— MAURIZIA ROSSI

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Born on **Nov 1988** in Alatri (Fr), Italia

ACADEMIC POSITIONS

- **Nov 2019 - now, Senior Assistant Professor (RTD-B)**

Dipartimento di Matematica e Applicazioni, Università degli Studi di Milano-Bicocca

- **Jan 2019 - Nov 2019, Junior Assistant Professor (RTD-A)**

Dipartimento di Matematica, Università di Pisa

- **Oct 2017 - Dec 2018, FSMP Postdoctoral Fellow**

Laboratoire de Mathématiques Appliquées (MAP5-UMR CNRS 8145), Université Paris Descartes, research group of A. Estrade

- **Dec 2015 - Sep 2017, Research Associate**

Unité de Recherche en Mathématiques, Université du Luxembourg, research group of G. Peccati

EDUCATION

- **PhD in Mathematics**, Università di Roma “Tor Vergata”, **Nov 2015**

Thesis: *The Geometry of Spherical Random Fields*. Advisors: P. Baldi, D. Marinucci

Grade: excellent quality cum laude

- **Master Degree in Pure and Applied Mathematics**, Università di Roma “Tor Vergata”, **Sep 2012**

Thesis: *The Structure of Isotropic Random Sections of the Spin Line Bundles of the 2-Sphere*. Advisor: P. Baldi

Grade: 110/110 cum laude

- **Bachelor Degree in Mathematics**, Università di Roma “Tor Vergata”, **Oct 2010**

Topic: *Il Teorema di Jordan*. Supervisor: F. Tovena

Grade: 110/110 cum laude

- **Maturità Scientifica**, Liceo Scientifico “Giovanni Sulpicio”, Veroli (Italy), **Jul 2007**

Grade: 100/100 cum laude

*Last update: Mar 27, 2021

PRIZES, GRANTS, AWARDS, QUALIFICATIONS

- **Abilitazione Scientifica Nazionale Professore di II fascia 01/A3** Analisi Matematica, Probabilità e Statistica Matematica (Qualification to participate in public competitions for Associate Professor positions in the area of Mathematical Analysis, Probability and Mathematical Statistics in Italy), **Nov 2020 - Nov 2029**
- **Premio Giovani Talenti 2020** – Università di Milano-Bicocca & Accademia Nazionale dei Lincei
- **GNAMPA Project 2019** *Proprietà analitiche e geometriche di campi aleatori*, PI. Other members: V. Cammarota, M. Romito, D. Trevisan
- **LMS Grant “Research in Pairs”** (scheme 4) with R.-W. Maffucci (University of Oxford), **Feb 2018**
- **FSMP Postdoctoral Fellowship (1 year, renewal), Jan 2018**
- **Qualification aux fonctions de maître de conférences, Mar 2017 - Dec 2021**
Section 25 (Mathématiques), Section 26 (Mathématiques appliquées et applications des mathématiques)
- **INdAM-SIMAI-UMI 2017 Prize** for the PhD Thesis
- **FSMP Postdoctoral Fellowship (1 year), Jan 2017**

PARTECIPATION TO SCIENTIFIC PROJECTS

- **Beyond Borders Project** (University of Rome Tor Vergata), PI: L. Caramellino (2021-2022)
- **GNAMPA project** *Geometria stocastica e campi aleatori*, PI: C. Durastanti (2020)
- **GNAMPA project** *Proprietà analitiche e geometriche di campi aleatori*, PI: M. Rossi (2019)
- **ANR-17-CE40-0008 project** *Unirandom*, PI: G. Poly (2018-2021)
- **Project PRA 2018 49** (University of Pisa). PI: V. Magnani (2019-2020)
- **F1R-MTH-PUL-15STAR (STARS) project**, PI: G. Peccati (2016-2017)
- **ERC Pascal project** no. 277742, PI: D. Marinucci (2012-2016)

PAPERS ON REFEREED JOURNALS

- **D. Marinucci, M. Rossi, A. Vidotto**
Non-universal fluctuations of the empirical measure for isotropic stationary fields on $\mathbb{S}^2 \times \mathbb{R}$.
Annals of Applied Probability, in press.
- **D. Marinucci, M. Rossi**
On the correlation between nodal and nonzero level sets for random spherical harmonics.
Annales Henri Poincaré, 22, 275-307 (2021).
- **C. Macci, M. Rossi, A. P. Todino**
Moderate Deviation estimates for nodal lengths of random spherical harmonics.
ALEA, Latin American Journal of Probability and Mathematical Statistics, 18, 249-263 (2021)
- **E. Di Bernardino, A. Estrade, M. Rossi**

On the excursion area of perturbed Gaussian fields.

ESAIM: Probability and Statistics, 24, 252-274 (2020)

• **D. Marinucci, M. Rossi, I. Wigman**

The asymptotic equivalence of the sample trispectrum and the nodal length for random spherical harmonics.

Annales de l'Institut Henri Poincaré, Probabilités et Statistiques, 56, 1, 374-390 (2020)

• **P. Baldi, L. Caramellino, M. Rossi**

Large Deviations of conditioned diffusions and applications.

Stochastic Processes and their Applications, 130, 3, 1289-1308 (2020)

• **F. Dalmao, I. Nourdin, G. Peccati, M. Rossi**

Phase singularities in complex arithmetic random waves.

Electronic Journal of Probability, 24, 71, 1-45 (2019)

• **M. Rossi**

Random nodal lengths and Wiener chaos.

Probabilistic Methods in Geometry, Topology and Spectral Theory, Contemporary Mathematics Series, 739, 155-169 (2019)

• **I. Nourdin, G. Peccati, M. Rossi**

Nodal statistics of planar random waves.

Communications in Mathematical Physics, 369, 1, 99–151 (2019)

• **M. Rossi** *The defect of random hyperspherical harmonics.*

Journal of Theoretical Probability, 32, 4, 2135-2165 (2019)

• **G. Peccati, M. Rossi**

Quantitative limit theorems for local functionals of arithmetic random waves.

Computation and Combinatorics in Dynamics, Stochastics and Control, The Abel Symposium, Rosendal, Norway, August 2016, 13, 659-689 (2018)

• **M. Rossi, I. Wigman**

Asymptotic distribution of nodal intersections for arithmetic random waves.

Nonlinearity, 31, 4472 (2018)

• **S. Campese, D. Marinucci, M. Rossi**

Approximate normality of high-energy hyperspherical eigenfunctions.

Journal of Mathematical Analysis and Applications, 461, 1, 500–522 (2018)

• **D. Marinucci, G. Peccati, M. Rossi, I. Wigman**

Non-universality of nodal length distribution for arithmetic random waves.

Geometric and Functional Analysis, 26, 3, 926-960 (2016)

• **D. Marinucci, M. Rossi**

Stein-Malliavin Approximations for Nonlinear Functionals of Random Eigenfunctions on \mathbb{S}^d .

Journal of Functional Analysis, 268, 8, 2379-2420 (2015)

• **P. Baldi, L. Caramellino, M. Rossi**

On sharp Large Deviations for the bridge of a general Diffusion.

In memoriam Marc Yor-Séminaire de Probabilités XLVII, Lecture Notes in Mathematics, 2137, 427-441 (2015)

• **P. Baldi, M. Rossi**

Representation of Gaussian Isotropic Spin Random Fields.

Stochastic Processes and their Applications, 124, 5, 1910-1941 (2014)

- **P. Baldi, M. Rossi**

On Levy's Brownian motion indexed by elements of compact groups.

Colloquium Mathematicum, 133, 227-236 (2013)

PREPRINT

- **V. Cammarota, D. Marinucci, M. Rossi**

Lipschitz-Killing curvatures for arithmetic random waves.

Submitted. arXiv:2010.14165.

- **G. Dierickx, I. Nourdin, G. Peccati, M. Rossi**

Small scale CLTs for the nodal length of monochromatic waves.

Submitted. arXiv 2005.06577.

CONFERENCE PROCEEDINGS

- **M. Rossi**

On the high-energy behavior of nonlinear functionals of random eigenfunctions on \mathbb{S}^d .

Proceedings of the 19th European Young Statisticians Meeting in Prague, 119-124 (2015)

REFEREE ACTIVITY OF RESEARCH ARTICLES FOR THE FOLLOWING JOURNALS

Annals of Probability, Journal of Functional Analysis, Electronic Journal of Probability, Communications in Mathematical Physics, SIAM Journal on Mathematical Analysis, International Mathematics Research Notices, Electronic Journal of Statistics, Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques, Electronic Communications in Probability, Journal of Multivariate Analysis, Annales Henri Poincaré, Stochastic Processes and their Applications, Statistics and Probability Letters, Journal of Theoretical Probability, Journal of Statistical Physics, Science China Mathematics, Proceedings of the American Mathematical Society, Test, Bernoulli.

SOME DUTIES

- Member of the **organising committee** of the **conference** “Recent advances in random processes - a conference in honor of Paolo Baldi”, Roma (Italy), Sep 2018.
- **Organiser** of the **session** “Limit Theorems in Probability and Applications” in the First Italian Meeting in Probability and Statistics, Torino (Italy), June 2017.
- **Organiser** of the Mathematics **seminar** “Our Mathematics Spectrum” at UR Mathématiques, Université du Luxembourg (Sep 2016 - Feb 2017).

MEMBERSHIPS

- **GNAMPA** (Gruppo Nazionale per l'Analisi Matematica, la Probabilità e loro Applicazioni) – **INdAM** (Istituto Nazionale di Alta Matematica)
- **BS** (Bernoulli Society)
- **UMI** (Unione Matematica Italiana)
- **EWM** (European Women in Mathematics)

INVITED TALKS IN CONFERENCES AND SEMINARS

- Conference on Random Nodal Sets, Rennes, Sep 2021
- Minisymposium on Random Algebraic Geometry at SIAM AG21, Aug 2021
- Seminario di Probabilità PRISMA-UMI, Jun 2021
- Workshop (online) on Set Estimation: a bridge between Spatial Statistics and Stochastic Geometry, CIRM Luminy, May 2021
- Asia-Pacific Seminar on Applied Topology and Geometry, Apr 2021
- University of Bonn (Probability Theory and Stochastic Analysis webinar), Dec 2020
- Scuola Internazionale Superiore di Studi Avanzati SISSA (Geometric structures webinar), Dec 2020
- Barcelona Mathematical Days, Barcelona (session Stochastic Analysis and Random Structures, online conference), Oct 2020
- University of Kansas (Probability webinar), May 2020
- RTG summer school, Lingen, Sep 2019 (mini-course)
- Conference on Random nodal sets, Rennes, Sep 2019
- II Italian Meeting on Probability and Statistics, Vietri sul Mare, Jun 2019 (session Recent developments in stochastic geometry)
- University of Tokyo, Tokyo, Apr 2019 (Applied analysis seminar)
- Mini-workshop on Geometry of random fields, Università di Roma “Tor Vergata”, Jan 2019
- Università di Pisa, Pisa, Dec 2018 (Probability seminar)
- Université de Rennes 1, Rennes, Dec 2018 (Probability seminar)
- Recent Advances in Random Processes – a conference in honor of Paolo Baldi’s 70th birthday, Rome, Sep 2018
- XII International Conference on Probability Theory & Mathematical Statistics, Vilnius, Jul 2018 (session Limit Theorems for stochastic processes)
- Random Waves in Oxford Workshop, Oxford, Jun 2018
- Stochastic Geometry Days 2018, Paris, May 2018
- Université Paris Descartes, Paris, Mar 2018 (GdT Thésards et Jeunes Docteurs)
- Université Pierre et Marie Curie, Paris, Mar 2018 (GdT Analyse)
- INdAM-SIMAI-UMI 2017 prize-giving ceremony, Roma, Feb 2018
- Workshop on Stein’s Method and Malliavin Calculus, Ruhr-Universität Bochum, Dec 2017
- Université Paris Descartes, Paris, Nov 2017 (MAP5 seminar)
- XXXIX Conference on Stochastic Processes and their Applications (SPA2017), Moscow, Jul 2017 (session Random waves)
- II Workshop Cumulants, Concentration & Super-Concentration, Ruhr-Universität Bochum, Jun 2017 (mini-course)
- Université de Lille 1, Lille, Jun 2017 (Séminaire de probabilités et statistique)
- I Italian Meeting on Probability and Statistics, Torino, Jun 2017 (session Geometry of random fields)
- École Normale Supérieure, Lyon, Apr 2017 (Geometry and Dynamics seminar)
- King’s College, London, Jan 2017 (Analysis and Probability seminar)
- Mini workshop on Free Probability, Luxembourg, Oct 2016

- IX Ghiffa-Oggebbio Probability meeting at Lago Maggiore, Ghiffa, Sep 2016
- Workshop on Probabilistic Methods in Spectral geometry and PDE, Centre de Recherches Mathématiques, Montréal, Aug 2016
- II Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies, Universidad de la Rioja, Logroño, Jun 2016
- Ruhr-Universität Bochum, May 2016 (RTG seminar)
- Random waves in London Workshop, King's College, London, May 2016
- XIX European Young Statisticians Meeting, Charles University, Prague, Sep 2015
- Università di Pavia, Nov 2014 (Probability seminar)
- Université du Luxembourg, May 2014 (Probability seminar)
- Università di Roma "Tor Vergata", Jan 2014 (ERC Pascal seminar)

CONTRIBUTED TALKS IN CONFERENCES

- XXI Congresso Unione Matematica Italiana, Università di Pavia, Sep 2019
- IV Barcelona Summer School on Stochastic Analysis, Centre de Recerca Matemàtica, Barcelona, Jul 2018.
- The mathematics of disorder Workshop, Institute for Applied Mathematics, University of Bonn, Oct 2016.
- XX Congresso Unione Matematica Italiana, Università di Siena, Sep 2015.
- Berlin-Padova Young Researchers Meeting: Stochastic Analysis and applications in Biology, Finance and Physics. Weierstrass Institute for Applied Analysis and Stochastics, Berlin, Oct 2014.
- II Barcelona Summer School on Stochastic Analysis, Centre de Recerca Matemàtica, Barcelona, Jul 2014.
- Nachwuchsforscherinnen in Stochastik-Junior female researchers in probability Workshop, TU Technische Universität Berlin, Oct 2013.

SHORT INVITED VISITS FOR SCIENTIFIC COLLABORATIONS

- Università di Roma Tor Vergata, Feb 2020 (2 weeks). Invited by D. Marinucci
- Università di Roma Tor Vergata, Jun 2019 (1 week). Invited by D. Marinucci
- University of Tokyo, Apr 2019, (1 week). Invited by K. Ishige
- Université Paris Descartes, Mar 2019 (3 days). Invited by A. Estrade
- Università di Roma Tor Vergata, Feb 2019 (2 days). Invited by D. Marinucci
- University of Oxford, Jun 2018, (1 week). Invited by R. Maffucci
- Université de Rennes 1, Jan 2018 (2 days). Invited by G. Poly
- Université du Luxembourg, Dec 2017 (3 days). Invited by G. Peccati
- King's College London, Jan 2017 (2 weeks). Invited by I. Wigman
- Università di Roma Tor Vergata, Jul 2016 (1 week). Invited by D. Marinucci
- Ruhr-Universität Bochum, May 2016 (3 days). Invited by P. Eichelsbacher
- King's College London, Jul 2015 (1 week). Invited by I. Wigman
- Università di Pavia, Nov 2014 (3 days). Invited by R. Carbone.
- Université du Luxembourg, Sep 2014 (1 week). Invited by G. Peccati
- King's College London, Jun 2014 (1 week). Invited by I. Wigman

- Université du Luxembourg, May 2014 (1 week). Invited by G. Peccati
- Université du Luxembourg, Mar 2014 (2 weeks). Invited by G. Peccati

CONFERENCES (WITHOUT COMMUNICATION) AND SCHOOLS ATTENDED

- Spring School on Random Interfaces, Augsburg, Mar 2019
- Conference in honor of Alessio Figalli, Fields medallist 2018, Centro Ennio de Giorgi, Pisa, Jan 2019
- IV Barcelona Summer School on Stochastic Analysis, Centre de Recerca Matemàtica, Barcelona, Jul 2018
- Conference on Statistical Topology of Random Manifolds, ICTP, Trieste, Jul 2016
- Conference on Probability, Statistics and Their Applications in honor of Ole E. Barndorff-Nielsen, Institute of Advances Studies, Aarhus, Jun 2015
- Conference Limit Theorems in Probability in honor of N.H. Bingham's 70th birthday, Imperial College, London, Mar 2015
- II Barcelona Summer School on Stochastic Analysis, Centre de Recerca Matemàtica, Barcelona, Jul 2014
- Introduction to Stein's Method, SMI summer school, Cortona, Jul 2013 (Final Grade: A)
- Probabilistic and Statistical Techniques for Cosmological Applications, INdAM Roma, Jun 2013

TEACHING

- **Metodi e Modelli Stocastici** (Lecturer, shared with Prof. F. Caravenna, 2020-2021)
Master in Mathematics, Università di Milano-Bicocca.
- **Probabilità e Statistica per l'Informatica** (Teaching assistant, 2020-2021)
Bachelor in Computer Science, Università di Milano-Bicocca. Course held by Prof. F. Caravenna and Prof. F. Masiero.
- **Topics from the Gaussian world** (Lecturer, shared with Prof. F. Caravenna, 2019-2020)
PhD course, Università di Milano-Bicocca.
- **Istituzioni e Didattica della Matematica** (Teaching assistant, 2019-2020)
Bachelor in Scienze della Formazione Primaria, Università di Milano-Bicocca. Course held by Prof. G. Tessitore.
- **Stochastic analysis on Gaussian and Poisson spaces** (Lecturer, shared with Prof. G. Peccati, 2019-2020)
PhD course, Università di Pisa.
- **Istituzioni di Matematica I** (Teaching assistant, Jan 2020)
Bachelor in Ottica e Optometria, Università di Milano-Bicocca. Course held by Prof. A. Raimondo.
- **Probabilità Superiore** (Lecturer, 2019-2020)
Master in Mathematics, Università di Pisa. Course assisted by Prof. D. Trevisan.
- **Probabilità** (Teaching assistant, 2019-2020)
Bachelor and Master in Mathematics, Università di Pisa. Course held by Prof.

D. Trevisan.

- **Elementi di Probabilità e Statistica** (Teaching assistant, 2018-2019)

Bachelor in Mathematics, Università di Pisa. Course held by M. Romito.

- **Istituzioni di Probabilità** (Teaching assistant, 2018-2019)

Master in Mathematics, Università di Pisa. Course held by M. Romito.

- **Probabilités et Statistiques pour l’Informatique** (Teaching assistant, 2018-2019)

Bachelor in Computer Science, Université Paris Descartes. Course held by R. Lachièze-Rey.

- **Software Technologies** (Lecturer, 2016-2017)

Master in Mathematics, Université du Luxembourg.

- **Stochastic Analysis** (Teaching assistant, 2015-2016)

Master in Mathematics, Université du Luxembourg. Course held by G. Peccati.

- **Calculus**, (Teaching assistant, 2015-2016)

Bachelor in Global Governance, Università di Roma “Tor Vergata”. Course held by A. Porretta

- **Precourses for Calculus** (Lecturer, Sep 2015)

Bachelor in Global Governance, Università di Roma “Tor Vergata”

- **Probabilità e Statistica Matematica** (Tutor, 2014-2015)

Bachelor in Mathematics, Università di Roma “Tor Vergata”. Course held by L. Caramellino

- **Algebra e Geometria**, (Teaching assistant, 2013-2014)

Bachelor in Medical Engineering, Università di Roma “Tor Vergata”. Course held by S. Trapani

- **Calcolo 2** (Tutor, 2013-2014)

Bachelor in Physics, Università di Roma “Tor Vergata”. Course held by Prof. L. Zsidó

- **Geometria e Algebra** (Tutor, 2012-2013)

Bachelor in Computer Science, Università di Roma “Tor Vergata”. Course held by F. Ghione

- **Algebra 1** (Tutor, 2011-2012)

Bachelor in Mathematics, Università di Roma “Tor Vergata”. Course held by E. Strickland

- **Analisi 2** (Tutor, 2010-2011)

Bachelor in Mathematics, Università di Roma “Tor Vergata”. Course held by A. Porretta

LANGUAGES

Italian, English, French

COMPUTER SKILLS

ECDL European Computer Driver Licence (Feb 2010)

C programming language, L^AT_EX, Scilab, MatLab, R