

CURRICULUM VITAE

VALENTINA CAMMAROTA

Current position	Ricercatore Tipo B. Sapienza University of Rome. Starting from March 22 2017.
Office	P.le Aldo Moro 5 - Edificio ex Fac. Di Scienze Statistiche, piano IV, stanza 7.
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PUBLICATIONS

SUBMITTED

- V. Cammarota and D. Marinucci. “A quantitative Central Limit Theorem for the Euler-Poincaré characteristic of random spherical eigenfunctions”. <http://arxiv.org/pdf/1603.09588.pdf>
- D. Cheng, V. Cammarota, Y. Fantaye, D. Marinucci and A. Schwartzman. “Multiple testing of local maxima for detection of peaks on the (celestial) sphere”. <http://arxiv.org/pdf/1602.08296v2.pdf>
- V. Cammarota and I. Wigman. “Fluctuations of the total number of critical points of random spherical harmonics”. <http://arxiv.org/abs/1510.00339.pdf>

PUBLICATIONS IN PRE-REVIEWED INTERNATIONAL JOURNALS

1. V. Cammarota, D. Marinucci and I. Wigman. “Fluctuations of the Euler-Poincaré characteristic for random spherical harmonics”. Accepted for publication on *Proceedings of the American Mathematical Society*. <http://arxiv.org/abs/1504.01868.pdf>
2. V. Cammarota, D. Marinucci and I. Wigman. “On the distribution of the critical values of random spherical harmonics”. *The Journal of Geometric Analysis*, **26** (2016) <http://arxiv.org/abs/1409.1364.pdf>
3. V. Cammarota and A. Lachal. “Entrance and sojourn times for Markov Chains. Application to (L, R) -random walks”. *Markov Processes and Related Fields*, **21**, issue 4, 887-938 (2015) <http://arxiv.org/abs/1503.08632.pdf>

4. V. Cammarota and D. Marinucci. “The Stochastic Properties of ℓ^1 -Regularized Spherical Gaussian Fields”. *Applied and Computational Harmonic Analysis*, **38**, issue 2, 262–283 (2015) <http://arxiv.org/abs/1309.3459.pdf>
5. V. Cammarota and D. Marinucci. “On the Limiting Behaviour of Needlelets Polyspectra”. *Annales de l’Institut Henri Poincaré (B) Probabilités et Statistiques*, **51**, issue 3, 1159–1189 (2015) <http://arxiv.org/abs/1307.4691.pdf>
6. V. Cammarota, A. De Gregorio and C. Macci. “On the asymptotic behavior of the hyperbolic Brownian motion”. *J. Stat. Phys.*, **154**, 1550–1560 (2014) <http://arxiv.org/abs/1303.4176.pdf>
7. S. M. Feeney, D. Marinucci, J. D. McEwen, H. V. Peiris, B. D. Wandelt and V. Cammarota. “Sparse Inpainting and Isotropy”. *J. Cosmol. Astropart. Phys.*, **1** (2014) <http://arxiv.org/abs/1308.0602.pdf>
8. V. Cammarota and P. Mörters. “On the most visited sites of planar Brownian motion”. *Electron. Commun. Probab.*, **17** no. 15, 1–9 (2012) <http://arxiv.org/abs/1202.1847.pdf>
9. V. Cammarota and E. Orsingher. “Hitting spheres on hyperbolic spaces”. *Theor. Probability Appl.* **57**, no 3, 560–587 (2012) <http://arxiv.org/abs/1104.1043.pdf>
10. V. Cammarota and A. Lachal. “Joint distribution of the process and its sojourn time in a half-line $[a, +\infty)$ for pseudo-processes driven by a high-order heat-type equation”. *Stochastic Process. Appl.*, **122**, 217–249 (2012)
11. V. Cammarota and A. Lachal. “Joint distribution of the process and its sojourn time on the positive half-line for pseudo-processes governed by high-order heat equation”. *Electron. J. Probab.*, **15**, 895–931 (2010) <http://arxiv.org/abs/1001.4201.pdf>
12. V. Cammarota and E. Orsingher. “Angular processes related to Cauchy random walks”. *Theor. Probability Appl.*, **55**, no 3, 489–506 (2010) <http://arxiv.org/abs/1107.4910.pdf>
13. V. Cammarota, A. Lachal and E. Orsingher. “Some Darling-Siebert relationships connected with random flights”. *Stat. Prob. Lett.*, **79**, no. 2, 243–254 (2009) <http://arxiv.org/abs/0911.5519.pdf>
14. V. Cammarota and E. Orsingher. “Cascades of Particles Moving at Finite Velocity in Hyperbolic Spaces”. *J. Stat. Phys.*, **133**, 1137–1159 (2008) <http://arxiv.org/abs/1107.4904.pdf>
15. V. Cammarota and E. Orsingher. “Travelling randomly on the Poincaré half-plane with a Pythagorean compass”. *J. Stat. Phys.*, **130**, 455–482 (2008) <http://arxiv.org/abs/1107.4914.pdf>

ACADEMIC EMPLOYMENT

2017 -	Ricercatore Tipo B. Sapienza University of Rome. Starting from March 22 2017.
2016 - 2017	Research Associate in Probability Theory/Mathematical Physics. Department of Mathematics, King's College London. Research project: <i>Nodal Lines</i> , ERC Grant agreement n. 335141, P.I. Dr. Igor Wigman. June 1 2016 - March 14 2017.
2012 - 2016	Postdoc in Probability. Department of Mathematics, University of Rome 'Tor Vergata'. Research project: <i>Probabilistic and Statistical Techniques for Cosmological Applications</i> , ERC Grant agreement n. 277742 PASCAL, P. I. Prof. Domenico Marinucci. June 1 2012 - May 31 2016.
2010 - 2012	Postdoc in Probability. Department of Statistics, Probability and Applied Statistics, 'Sapienza' University of Rome. Research field: <i>Diffusion Processes on Riemannian manifolds. Theory and Applications</i> . February 1 2010 - January 31 2012 .

EDUCATION

2015	<i>Qualification a Maître de Conférences</i> . Number of Qualification 15225275827. February 11 2015.
2010	PhD in Methodological Statistics. Thesis dissertation: <i>Random Processes in Hyperbolic Spaces. Hyperbolic Brownian Motion and Processes with Finite Velocity in the Hyperbolic Plane</i> . 'Sapienza' University of Rome. Advisor: Prof. Enzo Orsingher. February 22 2010.
2006	Degree in Mathematical Statistics, 110/110 <i>cum laude</i> . 'Sapienza' University of Rome. Thesis dissertation: <i>Stable Processes and Lévy Processes: Properties, Stochastic Integrals, and Related Distributions</i> . Advisor: Prof. Enzo Orsingher. May 25 2006.
2000	'Diploma di Maturità Classica' from 'Liceo Classico Statale Orazio', Rome.

SUMMER SCHOOLS

- Berlin Mathematical Summer School 2011. *Random Motions and Random Graphs*. September 26 - October 7 2011. Technische Universität, Berlin. Instructors: Peter Mörters and Nina Gantert.
- PIMS 2010 Summer School in Probability, University of Washington and Microsoft Research, June 21 - July 10 2010. Seattle, U.S.A. Instructors: Jean Bertoin, Scott Sheffield, Zhenqing Chen, Greg Lawler, Eyal Lubetzky, Yuval Peres, David Wilson.

- 39-th Probability Summer School Saint-Flour. July 5 - 18 2009. Clermont-Ferrand, France. Instructors: Robert Adler and Alison Etheridge.
- PIMS 2008 Summer School in Probability. June 11 - July 8 2008. University of British Columbia, Vancouver, Canada. Instructors: Krzysztof Burdzy and Geoffrey Grimmett.
- Torgnon Summer School in Statistics and Probability. *Lévy Processes Theory and Applications*. July 2-21 2007. Torgnon, Aosta. Instructors: Gennady Samorodnitsky and Souvik Ghosh.

LANGUAGES

- Italian
- English
- French (basic knowledge)

VISITING POSITIONS

- Academic Visitor of Dr. Igor Wigman, Department of Mathematics, King's College London, May 4-11 and October 12-17 2015.
- Academic Visitor of Dr. Igor Wigman, Department of Mathematics, King's College London, June 1-7 2014.
- Academic Visitor of Dr. Igor Wigman, Department of Mathematics, King's College London, June 18-28 2013.
- Academic Visitor of Prof. Aimé Lachal, INSA DE LYON, Pôle de Mathématiques, February 27 - March 12 2012.
- Academic Visitor of Prof. Peter Mörters, Department of Mathematical Sciences, University of Bath, September 8 2010 - February 1 2011.
- Academic Visitor of Prof. Aimé Lachal, INSA DE LYON, Pôle de Mathématiques, March 2 - 17 and June 4 - 17 2010.
- Academic Visitor of Prof. Aimé Lachal, INSA DE LYON, Pôle de Mathématiques, February 24 - March 12 and June 16 - 30 2009.

TEACHING EXPERIENCE

INSTRUCTOR

- Undergraduate level course: *Probability and Statistics*, Corso di Laurea in Ingegneria dell'Informazione Elettronica/Informatica/Telecomunicazioni, 'Sapienza' University of Rome. Academic year 2012-2013.
- Undergraduate level course: *Probability and Statistics*, Corso di Laurea in Ingegneria dell'Informazione Elettronica/Informatica/Telecomunicazioni, 'Sapienza' University of Rome. Academic year 2011-2012.
- Postgraduate course: *Laboratory of Stochastic Processes*, 'Facoltà di Ingegneria dell'Informazione, Informatica e Statistica', 'Sapienza' University of Rome. Academic year 2011-2012.
- Postgraduate course: *Biomathematics*, 'Scuola di Specializzazione in Statistica Sanitaria, 'Sapienza' University of Rome. Academic year 2007-2008.

TUTORIALS

- Tutorials for the course *Path properties of Brownian Motion* given by Prof. Peter Mörters, Berlin Mathematical School Summer School 2011. Technische Universität, Berlin.
- Tutorials for the course *Algebra 2A* given by Prof. David Calderbank, Department of Mathematical Sciences, University of Bath. Academic year 2010-2011.
- Tutorials for the course *Probability and Statistics*, 'Ingegneria Informatica e Automatica, 'Sapienza' University of Rome. Academic year 2010-2011.
- Tutorials for the course *Matematics III*, 'Facoltà di Scienze Statistiche, 'Sapienza' University of Rome. Academic year 2009-2010.
- Tutorials for the course *Mathematical Analysis II*, 'Facoltà di Scienze Statistiche, 'Sapienza' University of Rome. Academic year 2008-2009.
- Tutorials for the course *Linear Algebra*, 'Facoltà di Scienze Statistiche, 'Sapienza' University of Rome. Academic year 2008-2009.
- Tutorials for the course *Mathematical Analysis I*, 'Facoltà di Scienze Statistiche, 'Sapienza' University of Rome. Academic year 2007-2008.

SUPERVISION OF MASTER'S THESES

Academic year 2014-2015, Department of Mathematics, University of Rome 'Tor Vergata', student's name: Anna Paola Todino, title: Local Maxima of Random Processes and Multiple Testing, defence: October 23 2015.

INVITED AND CONTRIBUTED TALKS

- *On the critical values of random spherical harmonics and random plane waves.* Invited speaker. Workshop on Random Polynomials. Facultad de Ingeniería, Montevideo, Uruguay. February 20-24 2017.
- *On the critical values of random spherical harmonics.* Invited talk. Seminario di Probabilità e Statistica. Department of Mathematics, Sapienza University of Rome, Italy. January 31 2017.
- *On the critical values of random spherical harmonics.* Invited talk. Number Theory / Pure Math Seminar at University of Exeter. Department of Mathematics, University of Exeter, U.K. January 26 2017.
- *On the critical points of random spherical harmonics.* Invited speaker. Workshop Probabilistic Methods in Spectral Geometry and PDE. Centre de Recherches Mathématiques, Montreal, August 22-26 2016.
- *Critical points and Euler-Poincaré characteristic of random spherical harmonics.* Invited speaker. Conference on Statistical Topology of Random Manifolds: Theory and Applications. The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy. July 18-23 2016.
- *A Quantitative Central Limit Theorem for the Euler-Poincaré Characteristic of Random Spherical Eigenfunctions.* Invited talk. Stochastic and Applied Topology Seminar at the Technion, Faculty of Electrical Engineering Technion Israel Institute of Technology, Haifa, Israel. May 23 2016.
- *Fluctuations of the number of critical points of random spherical harmonics.* Invited speaker. Workshop 'Random Waves in London'. King's College London. May 3-5 2016.
- *Geometrical Properties of Random Spherical Laplace Eigenfunctions.* Contributed talk. 12th German Probability and Statistics Days 2016, Bochum, Germany. March 1-4 2016.
- *On the Critical Points of Random Spherical Harmonics.* Invited talk. King's College Analysis Seminar, London, October 15 2015.
- *Fluctuations of the Critical Values and Euler-Poincaré Characteristic of Random Spherical Harmonics.* Contributed talk. XX Congresso U.M.I., Siena, Italy. September 7-12 2015.
- *Geometrical Properties of Random Spherical Laplace Eigenfunctions.* Contributed talk. 38th Conference on Stochastic Processes and their Applications, Oxford. July 13-17 2015.
- *On the Distribution of the Critical Values of Random Spherical Harmonics.* Invited talk. Dipartimento di Matematica G. Peano, Università degli Studi di Torino. December 15 2014
- *Stein-Malliavin Approximations for Needlets Polyspectra.* Invited talk. Dipartimento di Scienze Statistiche, 'Sapienza' University of Rome. April 4 2014.
- *On the Limiting Behaviour of Needlets Polyspectra.* Contributed talk. 11th German Probability and Statistics Days 2014, Ulm, Germany. March 6 2014.
- *On the Favourite Points of Planar Brownian Motion.* Invited talk. Department of Mathematics, University of Rome 'Tor Vergata'. December 20 2012.
- *Random Structures and Dynamics Conference.* University of Oxford. 11-14 April 2011.

- *Triple Pioneer Points and Random Trees*. Invited talk. ‘Dipartimento di Scienze Statistiche’, ‘Sapienza’ University of Rome. February 2 2011.
- *Pseudo-Processes: Joint Distribution of the Process and its Sojourn Time*. Invited talk. Prob-L@b Seminars, Department of Mathematical Sciences, University of Bath, U.K. October 13 2010.
- *Branching Structures. A Paris-Bath Meeting*. Department of Mathematical Sciences, University of Bath, U.K. September 15 - 16 2010.
- *Pseudo-Processes. Joint Distribution of the Pseudo-Process and its Sojourn Time in $(0, +\infty)$* . Contributed talk. 39-th Probability Summer School Saint-Flour, Clermont-Ferrand, France. July 9 2009.
- *Non-Linear Transformations of Cauchy Random Variables*. Contributed talk. ‘Dipartimento di Statistica, Probabilità e Statistiche Applicate’, ‘Sapienza’ University of Rome. February 16 2009.
- *Two-Dimensional Random Motions at Finite Velocity on the Hyperbolic Plane*. Contributed talk. PIMS 2008 Summer School in Probability, UBC, Vancouver. June 12 2008.
- *Una Relazione di Darling-Siebert per Passeggiate Aleatorie Simmetriche*. Contributed talk. ‘Dipartimento di Statistica, Probabilità e Statistiche Applicate’, ‘Sapienza’ University of Rome. January 30 2008.
- *Passeggiate Aleatorie Persistenti nel Semi-piano di Poincaré*. Contributed talk. ‘Dipartimento di Statistica, Probabilità e Statistiche Applicate’, ‘Sapienza’ University of Rome. January 26 2007.

ACADEMIC SERVICE

- Organisation of the seminars supported by the ERC Grant PASCAL <http://www.mat.uniroma2.it/~marinucc/Pascal/Events.html>.
- Organisation of the workshop “Probabilistic and statistical Techniques for Cosmological applications”, hosted by I.N.d.A.M. and supported by the ERC Starting Grant PASCAL. <http://www.mat.uniroma2.it/~marinucc/Workshop/Home.html>. June 5-7 2013.

March 30 2017

Valentina Cammarota

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