Michele Salvi

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Personal

Born on March 22, 1985 in Rome, Italy.

Italian Citizenship.

Education and academic positions

2018- Postdoc in Mathematics, École Polytechnique and INRA, Paris.

2016-2018 Marie Skłodowska-Curie Individual Fellowship, Paris-Dauphine University.

2013-2015 Postdoc in Mathematics, TU Munich.

2010-2013 Ph.D. in Mathematics, TU Berlin, *summa cum laude*. Thesis:
The Random Conductance Model: local times large deviations, law of large numbers and effective conductance.
Supervisor: Prof. Dr. Wolfgang König. Date of defense: 22nd April 2013.

2012 Visitor of Prof. Marek Biskup at UCLA (US) in April and October, supported by an ESF Exchange grant (RGLIS).

2007-2009 Master degree in Mathematics, Roma 3 University, 110/110 magna cum laude. Thesis:
The Cut-off phenomenon for Monte Carlo Markov chains, supervised by Prof. Fabio Martinelli.

2008 Erasmus student, Universidad Complutense, Madrid.

2004-2007 Bachelor of Mathematics degree, Roma 3 University, 110/110 magna cum laude.

Funding

2016-2018 Marie Skłodowska-Curie Individual Fellowship.

2012 (October) ESF Short Visit grant for visiting Prof. Marek Biskup at UCLA, in the context of the program Random Geometry of Large Interacting Systems and Statistical Physics (RGLIS).

2012 (April and May) ESF Exchange grant for visiting Prof. Marek Biskup at UCLA, in the context of the program Random Geometry of Large Interacting Systems and Statistical Physics (RGLIS).

Research abroad

2019 NYU Shangai, Shangai (China) - collaboration with Dr. Joseba Dalmau, two weeks.

2015-2018 La Sapienza university, Rome (Italy) - collaboration with Prof. Alessandra Faggionato, about three weeks per year.

2016 NYU, New York City (US) - collaboration with Prof. Scott Armstrong, one week.

2013 Aix-Marseille university, Marseille (France) - collaboration with Dr. Alexandre Gaudillière, one week.

2012 UCLA, Los Angeles (US) - collaboration with Prof. Marek Biskup, two months.

Awards and grants

2015 Price as best Teaching Assistant in Mathematics at TU Munich (2nd place).

2010 BMS (Berlin Mathematical School) "Initiative of Excellence" Scholarship.

2007 INdAM (National Institute for Advanced Mathematics "Francesco Severi") Scholarship in Mathematics (4th classified in Italy).

2004 Roma 3 University Scholarship for first year Mathematics students (1st classified).

Teaching and professional activities

Supervision

2019 Co-supervision of Etienne Pinsard, Master 2 at Université Paris Diderot, Paris Sorbonne, Paris-Sud. 4 months stage: *Large random graphs: simulation and data analysis for the study of infections spread*.

Reviewing

Referee reviewer for the *Journal of Statistical Physics*, *Annales de l'Institut Henri Poincaré*, *Electronic Journal of Probability*, *Electronic Communications in Probability*. Collaborator of *Mathematical Reviews* and *Zentralblatt MATH*.

Teaching

2018 Lecturer for the course Statistics I, Paris-Dauphine University.

2015 Lecturer for the course Actuarial Risk, TU Munich.

2014, 2015 Main TA for the course Stochastic Analysis, TU Munich.

2014 Main TA for the course Probability Theory, TU Munich.

2012 Organizer of the colloquium for the Berlin graduate school IRTG.

2011, 2012, 2013 Collaborator for the tutorials of the course Probability 2, TU Berlin.

2009, 2010 University tutor for the course Probability 2, Roma 3 University.

2007, 2009 University tutor for the course Probability 1, Roma 3 University.

Internships

2015 Assenagon GmbH - Equity Portfolio Management team.
Main tasks: Statistical estimation of correlation matrices between stock prices; translation of new theoretical results into algorithms, programming in Matlab.

2013 Deutsche Bank, Quant Institute - Risk Analytics & Instruments, Portfolio Validation team.
Main tasks: Analysis of time-series related to Operational Risk of the bank; study of rating migration matrices in Credit Risk.

Research interests and publications

Probability Theory: Random Walks in Random Media, Random Graphs, Large Deviations, Homogenization Theory, Statistical Mechanics, Mixing Times for Monte Carlo Markov Chains, Stochastic Algorithms.

Published articles and preprints

[10] Q. Berger, M. Salvi, *Scaling limit of sub-ballistic 1D random walk among biased conductances: a story of wells and walls*, arXiv:1904.05283 (2019).

[9] J. Dalmau, M. Salvi, *Degree and clustering coefficient for the Poisson scale-free random graph: quenched results*, arXiv:1902.05774 (2019).

[8] A. Faggionato, M. Salvi, *On the regularity of velocity and diffusivity of 1d random walks in random environment*, accepted in ALEA Lat. Am. J. Probab. Math. Stat. (2018).

[7] Q. Berger, M. Salvi, *Scaling of sub-ballistic 1d random walks among random conductances*, Markov Processes and Related Fields, **25**, 171–187 (2019).

[6] A. Faggionato, N. Gantert, M. Salvi, *Einstein Relation and linear response in one-dimensional Mott Variable Range Hopping*, to appear in Annales de l'Institut Henri Poincaré, arXiv:1708.09610, (2018).

[5] M. Salvi, F. Simenhaus, *Random walk on a perturbation of the infinitely-fast mixing interchange process*, Journal of Statistical Physics, 171(4), 656-678, (2018).

[4] A. Faggionato, N. Gantert, M. Salvi, *The velocity of 1D Mott variable range hopping with external field*, Annales de l'Institut Henri Poincaré, Vol. 54, Nr. 3, 1165–1203, (2018).

[3] M. Biskup, M. Salvi, T. Wolff, *A central limit theorem for the effective conductance: I. Linear boundary data and small ellipticity contrasts*, Commun. Math. Phys. 328, no. 2, 701–731, (2014).

[2] N. Berger, M. Salvi, *On the speed of Random Walk among Random Conductances*, ALEA Lat. Am. J. Probab. Math. Stat., Vol. X, 1063-1083, (2013).

[1] W. König, T. Wolff, M. Salvi, *Large deviations for the local times of a random walk among random conductances*, Electronic Communications in Probability **17**, http://ecp.ejpecp.org/article/view/1820, (2012).

Articles in preparation

[P1] S. Armstrong, M. Salvi, *A counterexample to the Einstein Relation for elliptic, shift ergodic environments*.

[P2] A. Gaudillière, M. Salvi, *Mixing time for the cavity algorithm*.

[P3] V. Bansaye, M. Salvi, V. C. Tran, *Population dynamics on a Poisson point process: convergence to reaction-diffusion equations with homogenisation*.

Other publications

[O3] M. Salvi, *The Random Conductance Model: Local times large deviations, law of large numbers and effective conductance*, Ph.D. thesis under the supervision of Prof. Wolfgang König, 2013.

[O2] M. Salvi, *On the speed of Random Walk among Random Conductances*, in Oberwolfach Reports no. 6/2012, 45-46, 2012.

[O1] M. Salvi, *The Cut-off phenomenon for Monte Carlo Markov chains*, Master thesis, under the supervision of Prof. Fabio Martinelli, 2009.

Talks and seminars

2019 (invited) Second Italian Meeting on Probability and Mathematical Statistics, Vietri sul mare, Italy.

2019 (invited) Probability seminars, NYU Shanghai, China.

2019 Séminaires unité MaIAGE, INRA, Paris, France.

2019 (invited) Séminaire de probabilités, statistique et applications LMA UMR 7348, Poitiers, France.

2018 (invited) Workshop FDT on Fluctuation-dissipation relations, FRUMAM, Marseille, France.

2018 (invited) Séminaires de Probabilités, École Polytechnique, Paris, France.

2017 (invited) Séminaires de Probabilités, UPEC, Paris, France.

2017 39th Conference on Stochastic Processes and their Applications, Moscow, Russia.

2017 (invited) MIP, Leiden University, Netherland.

2017 (invited) Les Probas du Vendredi, LPMA, Paris, France.

2016 Séminaire Analyse-Probabilités, Université Paris-Dauphine, France.

2016 Probability World Congress, Fields Institute, Toronto, Canada.

2015 Stochastic Methods in Finance and Physics, Heraklion, Greece.

2015 (invited speaker) YEP XII Workshop on Random walks in random environment, Eurandom, Eindhoven, Netherlands.

2014 PIMS Summer School, University of British Columbia, Canada.

2014 Columbia University Probability Seminars, New York City, US.

2013 LATP Séminaires de Probabilités et statistiques, Marseille, France.

2013 (invited speaker) YEP X on Random Polymers, Eurandom, Eindhoven, Netherlands.

2012 (Poster) Workshop: Interacting Particle Systems and Related Topics, Firenze, Italy.

2012 UCLA Probability Seminars, Los Angeles, US.

2012 Workshop: Interplay of Analysis and Probability in Physics, Oberwolfach, Germany.

2011 7th Cornell Probability Summer School, Cornell University, US.

2011 IRTG Seminars, TU Berlin, Germany.

Conferences

2018 Workshop FDT on Fluctuation-dissipation relations, FRUMAM, Marseille, France.

2017 39th Conference on Stochastic Processes and their Applications, Moscow, Russia.

2017 Random Walks with Memory, CIRM, Marseille, France.

2017 Stochastic dynamics out of equilibrium, Institut Henri Poincaré, Paris, France.

2017 New trends in Mathematical Physics at the interface of Analysis and Probability, UCL, London, England.

2016 Probability World Congress, Fields Institute, Toronto, Canada.

2015 Stochastic Methods in Finance and Physics, Heraklion, Greece.

2015 YEP XII Workshop on Random walks in random environment, Eurandom, Eindhoven, Netherlands.

2014 PIMS Summer School, University of British Columbia, Canada.

2013 Dynamical and disordered systems, CIRM, Marseille, France.

2013 Equilibrium statistical mechanics, CIRM, Marseille, France.

2013 YEP X Probability school on Random Polymers, Eurandom, Eindhoven, Netherlands.

2012 Workshop: Scaling Limits in Models of Statistical Mechanics, Oberwolfach, Germany.

2012 Workshop: Interacting Particle Systems and Related Topics, Firenze, Italy.

2012 MSRI Workshop: Random Walks and Random Media, Berkeley, US.

2012 Workshop: Interplay of Analysis and Probability in Physics, Oberwolfach, Germany.

2011 BMS Summer School: Random Motions and Random Graphs, Berlin, Germany.

2011 7th Cornell Probability Summer School, Cornell University, US.

2010 6th Ph.D. Student Conference in Stochastics, Zürich, Switzerland.

2010 IRTG Summer School, Disentis, Switzerland.

2009 PIMS Summer School, University of British Columbia, Canada.

Other skills

Languages Italian (mothertongue), English (fluent), French (fluent), Spanish (good), German (good).

Informatics LaTeX, HTML, Office.

Programming C, R, Matlab, JAVA.