

FIRAS RASSOUL-AGHA

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EDUCATION

Ph.D., January 2003	New York University, Courant Institute of Mathematical Sciences
M.S., May 1999	New York University, Courant Institute of Mathematical Sciences
Magistère, June 1996	École Normale Supérieure de Cachan, Paris
Agrégation, June 1996	École Normale Supérieure de Cachan, Paris

POSITIONS HELD

2014 -	Professor. University of Utah, Department of Mathematics <i>Research interests:</i> Probability theory, stochastic processes, random media, disordered systems, statistical mechanics, mathematical physics, stochastic climate and weather models, mathematical biology
2009 - 2014	Associate Professor. University of Utah, Department of Mathematics
2005 - 2009	Assistant Professor. University of Utah, Department of Mathematics
2004 - 2005	Postdoctoral Researcher. Ohio State University, Mathematical Biosciences Institute
2002 - 2004	Visiting Assistant Professor. Ohio State University, Department of Mathematics
1997 - 2002	Research and Teaching Assistant. New York University, Courant Institute

BOOKS AND LECTURE NOTES

- F. Rassoul-Agha. Busemann functions, geodesics, and the competition interface for directed last-passage percolation. Lecture notes for the 2017 AMS short course on random growth models, 2017
- F. Rassoul-Agha, T. Seppäläinen. A course on large deviation theory with an introduction to Gibbs measures. Graduate Studies in Mathematics, 162, American Mathematical Society, Providence, 2015
- R.C. Dalang, D. Khoshnevisan, C. Mueller, D. Nualart, Y. Xiao. A minicourse on stochastic partial differential equations, 2006. Ed. by D. Khoshnevisan and F. Rassoul-Agha. Lect. Notes in Math 1962. Springer, Berlin, 2009
- D. Conus, D. Khoshnevisan, F. Rassoul-Agha. Introduction to probability. Lecture notes used for undergraduate probability

PAPERS

- F. Rassoul-Agha, T. Seppäläinen, and A. Yilmaz. Averaged vs. quenched large deviations and entropy for random walk in a dynamic random environment. Submitted, 2016
- K. Smith, C. Strong, and F. Rassoul-Agha. A new method for generating stochastic simulations of air temperature. *J. Appl. Meteor. Climatol.* To appear, 2017
- N. Georgiou, F. Rassoul-Agha, and T. Seppäläinen. Geodesics and the competition interface for the corner growth model. *Probab. Th. Relat. Fields.* Online first, 2016
- N. Georgiou, F. Rassoul-Agha, and T. Seppäläinen. Stationary cocycles and Busemann functions for the corner growth model. *Probab. Th. Relat. Fields.* Online first, 2016
- F. Rassoul-Agha, T. Seppäläinen, and A. Yilmaz. Variational formulas and disorder regimes of random walks in random potentials. *Bernoulli*, **23**, 405-431, 2017
- M. Damron, F. Rassoul-Agha, and T. Seppäläinen. Random growth models. *Notices of the AMS*, **63**, 1004-1008, 2016
- N. Georgiou, F. Rassoul-Agha, and T. Seppäläinen. Variational formulas and cocycle solutions for directed polymer and percolation models. *Commun. Math. Phys.*, **346**, 741-779, 2016
- N. Georgiou, F. Rassoul-Agha, and T. Seppäläinen, and A. Yilmaz. Ratios of partition functions for the log-gamma polymer. *Ann. Probab.*, **43**, 2282-2331, 2015

- A. Borisjuk and F. Rassoul-Agha. Quasiperiodicity and phase locking in stochastic circle maps: a spectral approach. *Phys. D: Nonlinear Phenomena*, **288**, 30-44, 2014
- F. Rassoul-Agha and T. Seppäläinen. Quenched point-to-point free energy for random walks in random potentials. *Probab. Th. Relat. Fields*, **158**, 711-750, 2014
- D. Campos, A. Drewitz, A.F. Ramírez A.F., F. Rassoul-Agha, and T. Seppäläinen. Level 1 quenched large deviation principle for random walk in dynamic random environment. *Bull. Inst. Math. Acad. Sin.*, **8**, 1-29. Special Issue in honor of the 70th birthday of Raghu Varadhan, 2013
- F. Rassoul-Agha, T. Seppäläinen, and A. Yilmaz. Quenched free energy and large deviations for random walks in random potentials. *Comm. Pure Appl. Math.*, **66**, 202-244, 2013
- M. Joseph, F. Rassoul-Agha. Almost sure invariance principle for continuous-space random walk in dynamic random environment. *ALEA Lat. Am. J. Probab. Math. Stat.*, **8**, 43-57, 2011
- F. Rassoul-Agha, T. Seppäläinen. Process-level quenched large deviations for random walk in random environment. *Ann. Inst. H. Poincaré Probab. Stat.*, **45**, 214-242, 2011
- F. Rassoul-Agha, T. Seppäläinen. Quenched invariance principle for ballistic random walk in random environment. *Ann. Inst. H. Poincaré Probab. Stat.*, **45**, 373-420, 2009
- F. Rassoul-Agha, T. Seppäläinen. An almost sure invariance principle for additive functionals of Markov chains. *Statist. Probab. Lett.*, **78**, 854-860, 2008
- M. Balázs, F. Rassoul-Agha, T. Seppäläinen, S. Sethuraman. Existence of the zero range process and a deposition model with superlinear growth rates. *Ann. Probab.*, **35**, 1-31, 2007
- F. Rassoul-Agha, T. Seppäläinen. Quenched invariance principle for multidimensional ballistic random walk in random environment with a forbidden direction. *Ann. Probab.*, **35**, 1209-1249, 2007
- M. Balázs, F. Rassoul-Agha, T. Seppäläinen. The random average process and random walk in a space-time random environment in one dimension. *Commun. Math. Phys.*, **266**, 499-545, 2006
- F. Rassoul-Agha, T. Seppäläinen. Ballistic random walk in random environment with a forbidden direction. *ALEA Lat. Am. J. Probab. Math. Stat.*, **1**, 111-147, 2006
- F. Rassoul-Agha, T. Seppäläinen. An almost sure invariance principle for random walks in a space-time random environment. *Probab. Th. Relat. Fields*, **133**, 299-314, 2005
- F. Rassoul-Agha. On the zero-one law and the law of large numbers for a random walk in a mixing random environment. *Electron. Comm. in Probab.*, **10**, 36-44, 2005
- F. Rassoul-Agha. Large deviations for random walks in a mixing random environment and other (non-Markov) random walks. *Comm. Pure Appl. Math.*, **57**, 1178-1196, 2004
- F. Rassoul-Agha. The point of view of the particle on the law of large numbers for random walks in a mixing random environment. *Ann. Probab.*, **31**, 1441-1463, 2003

CONFERENCES

- | | |
|----------------|--|
| April 2017 | Qualitative Methods Around KPZ, CIRM, Lumini, Marseille. <i>Speaker</i> |
| January 2017 | Mini Course on Random Growth Models, National AMS Meeting, Atlanta. <i>Organizer and Speaker</i> |
| August 2016 | Raghu Varadhan' 75th Birthday conference, Berlin Technical University. <i>Speaker</i> |
| October 2015 | AMS Central Fall Sectional Meeting, Loyola University. <i>Speaker</i> |
| August 2015 | First Passage Percolation and Related Models, AIM. <i>Speaker</i> |
| May 2015 | Random Polymers and Algebraic Combinatorics, Clay Math Institute, Oxford. |
| April 2015 | Random Motion in Random Media, Eurandom, Eindhoven. <i>Speaker</i> |
| October 2014 | AMS Western Fall Sectional Meeting, San Francisco State University. <i>Speaker</i> |
| May 2014 | Frontier Probability Days, University of Arizona. <i>Organizer and Speaker</i> |
| September 2012 | Random Media II. Sendai Japan. <i>Speaker</i> |
| July 2012 | Random Networks and Environments, Istanbul Center for Mathematical Sciences. <i>Speaker</i> |
| July 2012 | 8th World Congress in Probability and Statistics, Istanbul. <i>Speaker</i> |
| May 2012 | Workshop on Random Walks and Random Media, MSRI |

October 2011	Workshop on the Kardar-Parisi-Zhang equation and its universality class, American Institute of Mathematics.
September 2011	Workshop on Disordered Media, University of Warwick.
July 2011	A Conference in Honor of the 70th Birthday of S. R. Srinivasa Varadhan, National Taiwan University. <i>Speaker</i>
May 2011	Random Environments, Cornell. <i>Organizer</i>
March 2011	Frontier Probability Days, University of Utah. <i>Organizer</i>
February 2011	Interacting Processes in Random Environments, Fields Institute, Toronto. <i>Speaker</i>
October 2010	Midwest Probability Colloquium, Northwestern University. <i>Speaker</i>
June 2009	Random Walks in Random Environment, PIMS, UBC. <i>Speaker</i>
March 2009	Frontier Probability Days, University of Utah. <i>Organizer</i>
July 2007	Summer Session on Statistical Mechanics, PCMI.
May 2007	Non-Classical Random Walks, Oberwolfach. <i>Speaker</i>
November 2006	Random Media, Banff.
October 2006	AMS Sectional meeting, University of Utah. <i>Special Session Organizer</i>
April 2006	AMS Sectional meeting, San Francisco State University. <i>Speaker</i>
August 2005	New Directions in Probability Theory, IMA. <i>Speaker at RWRE workshop</i>
June 2005	Stochastic Processes and their Applications, University of Santa Barbara. <i>Abstract</i>
June 2005	Random Media and Stochastic Partial Differential Equations, University of Southern California.
October 2003	Workshop on Random Media, Oberwolfach. <i>Speaker</i>
August 2003	Workshop on Random Walks in Random Environments, Newton Institute. <i>Speaker</i>
July 2003	The Annual Computational Neuroscience Meeting, Alicante, Spain.
May 2002	School and Conference on Probability Theory, ICTP, Trieste, Italy. <i>Speaker</i>
August 2001	Workshop on Mathematical Physics, Mambucaba, Brazil. <i>Abstract</i>
May 2001	Seminar on Stochastic Processes 2001, University of Florida
November 2000	Probability 2000, New York University.
May 2000	Fifth World Congress of the Bernoulli Mathematical Society for Mathematical Statistics and Probability, University of Guanajuato, Mexico.
March 2000	Seminar on Stochastic Processes 2000, University of Utah.

AWARDS

2014 - 2015	Simons Foundation Fellowship.
2008 - 2015	NSF CAREER Award. Random Walk in Random Environment
Fall 2001 - Spring 2002	Dean's dissertation fellowship. New York University
Fall 1997 - Spring 2001	Teaching and Research Assistantship. Courant Institute, New York University
Summer 1999 and 2000	Research Assistantship. Courant Institute, New York University

GRANTS

2016	NSF Grant. Support for "Frontier Probability Days", University of Utah, May 2016.
2014 - 2017	NSF Grant. Random Polymer Measures.
2014 - 2015	Simons Foundation Fellowship.
2014	NSF Grant. Support for "Frontier Probability Days", University of Arizona, May 2014.
2008 - 2015	NSF CAREER Award. Random Walk in Random Environment
2005 - 2008	NSF Grant. Stochastic Interactions between Particles and Environments. Joint with M. Balázs, University of Wisconsin-Madison.

PROFESSIONAL ACTIVITIES

- 2015 - **Associate Editor.** Electron. J. Probab., Electron. Comm. Probab.
- May 2016 **Organizer.** Frontier Probability Days. Department of Mathematics, U Utah
- May 2014 **Organizer.** Frontier Probability Days. Department of Mathematics, U Arizona
- 2006 - 2012 **Organizer.** Stochastics Seminar. Department of Mathematics, U Utah
- May 2011 **Organizer.** Random Environments. Department of Mathematics, Cornell U
- March 2009/2011 **Organizer.** Frontier Probability Days. Department of Mathematics, U Utah
- 2010 **Speaker.** Science Night Live. College of Science, U Utah
- 2009 - 2013 **Course Coordinator.** *Math 1070 (Introductory Statistics)*
- 2011 - 2013 **MStat Committee Member.** *Math Track Representative*
- 2006 - present **Departmental Committee Member.** *Executive, Hiring, Instructorship, Graduate, Statistics Search, Undergraduate Curriculum*
- October 2006 **Organizer.** (with T. Schmitz) Special Session on Random Motion in Random Media, AMS Sectional meeting. Department of Mathematics, U Utah
- July 2006 **Organizer.** (with D. Khoshnevisan) A Minicourse on Stochastic Partial Differential Equations. Department of Mathematics, U Utah
- 2002 - present **Referee.** *Comm. Pure Appl. Math., Ann. Probab., Ann. Appl. Probab., Probab. Th. Relat. Fields, Commun. Math. Phys., J. Eur. Math. Soc., J. Appl. Probab., Proc. R. Soc., Ann. Inst. H. Poincaré, Electron. Comm. Probab., Electron. J. Probab., Stoch. Proc. Appl., Ser. A, J. Stat. Phys., J. Mat. Phys., Mathematical Reviews*
- 2003 - present **Grant Reviewer.** ICTP, NSF, AMS/NSA, Simons Foundation
- 2002 - 2003 **Organizer.** Probability Journal Club. Courant Institute, New York University
- 2001 - 2002 **Organizer.** Student/Postdoc Seminar. Courant Institute, New York University

STUDENTS

- 2016- Sergazy Nurbavliyev (Ph.D.)
- 2015- Daniel Lee (Ph.D.)
- 2015-2016 Yushan Gu (REU)
- 2015-2016 Laurel Baeder (M.Stat.)
- 2011-2016 Tony Lam (Ph.D.)
- 2014-2015 Hanlei Zhu (M.Stat.)
- 2013-2014 Aurora Jensen (M.Stat.)
- 2013-2014 Wuxin Wang (UROP)
- 2012-2013 Derek Doel (M.Stat.)
- 2009-2012 Anna Schoening (Ph.D.)
- 2012 Kate Roylance (REU)
- 2010-2011 Jim Sferas (M.Stat.)
- 2011 Keyang Zhang (UROP)
- 2009 Ning Xie (UROP)
- 2008 Yunhye Chu, David Grimshaw, Michael Parker, Tyler Peterson, Nathan Simonsen (REU)
- 2007-2008 Zsuzsanna Horváth (M.Sci.)

POSTDOCTORAL FELLOWS

- 2014-2017 Arjun Krishnan
- 2011-2014 Nicos Georgiou (currently Lecturer at the University of Sussex)
- 2009-2012 Mathew Joseph (currently Lecturer at the University of Sheffield)

TEACHING EXPERIENCE**Classes taught**

- Graduate Statistics. University of Utah, Spring 2017
- Graduate Probability. University of Utah, Fall 2016
- Stochastic Processes and Simulation I & II. University of Utah, Fall 2013, 2015 and Spring 2014, 2016
- Linear Models. University of Utah, Fall 2012
- Basic Probability. University of Utah, Fall 2009 and 2010 and Spring 2012, 2013, 2014, 2016
- Introductory Statistics. University of Utah, 2009-2011
- REU on random walks. University of Utah, Fall 2008
- Special Topics in Probability. University of Utah, Fall 2007, 2008, and Spring 2013, 2017
- Statistical Inference I & II. University of Utah, 2005-2009, 2011-2012
- Introduction to Statistical Thinking. University of Utah, Spring 2006
- Precalculus, Calculus I & II, Ordinary and Partial Differential Equations. Ohio State University, 2002-2004
- Mathematical Thinking, Calculus I, Advanced Calculus II, Discrete Mathematics. New York University, 1997-2002
- Graduate Basic Probability. New York University, Summer 2002

Workshops ran

- Written Comprehensive Exams (Graduate level). Courant Institute, Fall 1999
- Several series of talks on *Random Walks in Random Media*. Courant Institute, Summer 1999, Spring 2001, Spring 2002
- Complex Variables (Graduate level). Courant Institute, Fall 1998

Training

- Passed the “Agrégation” exam. École Normale Supérieure de Cachan, 1995-1996