

BIOGRAPHY

Fraydoun Rezakhanlou

Education:

- 1986 M.S., University of Virginia, Charlottesville, VA
- 1989 Ph.D., New York University, New York, NY

Appointments:

- 1989-90 Visiting Member, Postdoctoral Position, Courant Institute
- 1990-91 Visiting Member, Postdoctoral Position, Institute for Advanced Study
- 1991 Assistant Professor, Department of Mathematics, UC Berkeley
- 1997 Associate Professor, Department of Mathematics, UC Berkeley
- 2004 Professor, Department of Mathematics, UC Berkeley

Awards and Honors:

- 1980 First place recipient in the National Mathematics Competition sponsored by the Iranian Mathematical Society
- 1989 Jay Krakauer Award from the Graduate School of Arts and Science
- 1994 Sloan Foundation Fellowship

Ph.D students:

James Tarver, Paul Covert, Alan Hammond, Kay Kirkpatrick, Mojtaba Ranjbar, Mohammad-Reza Yaghouti, Ivan Matic

Current: Dave Kaspar

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Fraydoun Rezakhanlou

1. The packing measure of the graph and the level sets of certain continuous functions, *Math Proceedings of the Cambridge Philosophy Society*, **104**, 347-360, (1988).
2. The packing measure of the graph of a stable process (with S.J. Taylor) *Asterisque* no.157-158, as a part of Proceedings of Paul Levy Conference, (1988).
3. Hydrodynamic limit for a system with finite range interactions, *Communications in Mathematical Physics*, **129**, 445-480, (1990).
4. Hydrodynamic limit for attractive particle systems on Z^d , *Communications in Mathematical Physics*, **140**, 417-448, (1991).
5. Propagation of chaos for symmetric simple exclusions, *Communications on Pure and Applied Mathematics*, XLVII 943-957, (1994).
6. Evolution of tagged particles in non-reversible particle systems, *Communications in Mathematical Physics*, **165**, 1-32, (1994).
7. Microscopic structure of shocks in one conservation laws, *Annales de l'Institut Henri Poincare- Analyse non lineaire*, **12**, 119-153, (1995).
8. Kinetic limits for a class of interacting particle systems, *Probability Theory and Related Fields*, **104**, 97-146, (1996).
9. Propagation of chaos for particle systems associated with discrete Boltzmann equation, *Stochastic Processes and their Applications*, **64**, 55-72, (1996).
10. Hydrodynamic limit for particle systems with nonconstant speed parameter (with P.Covert), *Journal of Statistical Physics*, **18**, 383-426, (1997).
11. Boltzmann-Grad limit for a particle system in continuum, (with J. E. Tarver), *Annales de l'Institut Henri Poincare- Probabilites et Statistiques*, **33**, 753-796, (1997).
12. Equilibrium fluctuations for the discrete Boltzmann equation, *Duke Journal of Mathematics*, **93**, 257-288, (1998).
13. Large deviations from a kinetic limit, *Annals of Probability*, 26, 1259-1340, (1998).
14. A stochastic model for the sandpile growth and its continuum limit (with L.C.Evans), *Communications in Mathematical Physics*, **197**, 325-345, (1998).
15. Large deviations for the symmetric simple exclusion process in dimension $d \geq 3$, (with J. Quastel and S.R.S Varadhan), *Probab. Theory Relat. Fields* **113**, 1-84 (1999).

16. Homogenization for stochastic Hamilton-Jacobi PDEs, (with J. L. Tarver), *Arch. Rational Mech. Anal.* **151**, 277-309 (2000).
17. Central limit theorem for stochastic Hamilton-Jacobi equations, *Commun. Math. Physics* **211**, 413-438 (2000).
18. Continuum limit for some growth models (II), *Annales of Probability* **29**, 1329-1372 (2001).
19. Continuum limit for some growth models, *Stochastic Process. Appl.* **101**, 1–41 (2002).
20. A Central limit theorem for the asymmetric simple exclusion process, *Ann. Inst. H. Poincaré Probab. Statist.* **38**, 437–464 (2002).
21. A stochastic model associated with Enskog equation and its kinetic limit, *Commun. Math. Physics* **232**, 327–375 (2003).
22. Boltzmann-Grad limits for stochastic hard sphere models, *Commun. Math. Phys.* **284**, 555-637 (2004).
23. Stochastic homogenization of Hamilton-Jacobi-Bellman equations, (with E. Kosygina and S.R.S. Varadhan), *Comm. Pure Appl. Math.* **59**, 1489–1521(2006).
24. Kinetic limit for a system of coagulating planar Brownian particles, (with Alan Hammond), *J. Statist. Phys.* **123**, 997-1040 (2006).
25. The coagulating Brownian particles and Smoluchowski's equation. *Markov Process. Related Fields* 12, 425–445, (2006).
26. The kinetic limit of a system of coagulating Brownian particles, (with Alan Hammond) *Arch. Rational Mech. Anal.* **185**, 1–67, (2007).
27. Moment bounds for the Smoluchowski equation and their consequences (with Alan Hammond) *Commun. Math. Phys.* **276**, 645-670 (2007)
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30. Coagulation, diffusion and the continuous Smoluchowski equation (with Alan Hammond and Mohammad Reza Yaghouiti) *Stochastic Process. Appl.* **119**, 3042-3080, (2009).
31. Equilibrium fluctuations for a model of coagulating-fragmenting planar Brownian particles, (with Mojtaba Ranjbar) *Commun. Math. Phys.* **296**, 769826 (2010).
32. Moment bounds for the solutions of the Smoluchowski equation with coagulation and fragmentation, *Proceedings of the Royal Society of Edinburgh*,
33. A Prelude to the theory of random walks in random environments, *Bulletin of IMS*.