

CURRICULUM VITAE

Ionel POPESCU

Addresses

Georgia Institute of Technology
School of Mathematics
686 Cherry Street
Atlanta, GA 30332-0160

Office: (404)-385-8339
Fax: (404)-894-4409

ipopescu@math.gatech.edu
webpage: www.math.gatech.edu/~ipopescu

IMAR
21 Calea Grivitei Street
010702 Bucharest, ROMANIA

Tel: (+40)-(0)21 319 65 06
Fax: (+40)-(0)21 319 65 05

Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 2000-2004
Ph.D. in Pure Mathematics, June 2004
Thesis title: *Morse Inequalities, a Probabilistic Approach*
Advisor: Daniel W. Stroock
UNIVERSITY OF BUCHAREST, ROMANIA, 1997-1998
Master in Mathematics, June 1998.
UNIVERSITY OF BUCHAREST, ROMANIA, 1992-1997
Bachelor of Science in Mathematics, June 1997.

Employment History

- Scientific Researcher, 2006 - present, Institute of Mathematics of Romanian Academy;
 - Assistant Professor, August 2007- present, Georgia Institute of Technology,
 - Boas Assistant Professor, Sept 2004 - August 2007, Northwestern University,
 - Research Assistant, June 1997 - July 2006, Institute of Mathematics of Romanian Academy.
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Fields of Interest

Stochastic Analysis, Differential Geometry, Functional Analysis, Random Matrices, Free Probability.

Grants

- European Union - Marie Curie grant (IRG) - *Stochastic Analysis, Mass Transportation and Free Probability* - 2010-2014 - €100000 (funded through Institute of Mathematics of Romanian Academy).
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Publications

(1) Already Published:

- "Mass Transportation Proofs of Free Functional Inequalities, and Free Poincaré Inequalities", - joint work with Michel Ledoux - *J. Funct. Anal.* - online - March 2009
- "General Tridiagonal Random Matrix Models, Limiting Distributions and Fluctuations" - *Probability Theory and Related Fields*- Volume 144, issue 1-2, May 2009, pp. 179-220
- "Talagrand Inequality for the Semicircular Law and Energy of the Eigenvalues of Beta Ensembles" - *Mathematical Research Letters*, Volume 14, Issue 6, November 2007, pp. 1023-1032
- "Morse Inequalities, a Function Space Integral Approach" - *J. Funct. Anal.* 235 (2006), no. 1, 1-68,
- "Toeplitz algebras arising from actions of \mathbb{N}^r " - *Revue Romaine de Mathématique pure et Appliquées* - with Iulian Popescu

(2) Submitted:

- "Analyticity of Planar Limits" - submitted to *Comm. Math. Physics.* - with Stavros Garofalidis

(3) **To be submitted:**

- "Probability and Ricci Flow" - joint with Robert W. Neel.
- "The One Dimensional Free Poincaré Inequality and its connection with other Free Functional Inequalities" - with Michel Ledoux
- "Freeness and Random Matrices with Dependencies" - joint with Iulian Popescu

(4) **In Progress**

- "Mass Transportation Proofs of Free Functional Inequalities, and Free Poincaré Inequalities on the Circle" - with Michel Ledoux
- "Transportation Inequality on the Path Space of a Riemannian Manifold" - with Elton Hsu
- "Brownian Motion on Manifolds and Morse Theory"
- "Functional Inequalities in Free Probability - Several Non-Commuting Variables" - with Michel Ledoux

Invited Conference Talks

- Conference on Random Matrices, June 1-4 2010, Paris
- Probability & Geometry in High Dimensions, May 17-21 2010, Paris
- Workshop on Asymptotic Analysis and Stochastic Methods for Heterogeneous Media, June 9 - 13, 2010, Alba Iulia, Romania
- CMS/AMS Winter Session - Ottawa - December 5-8, 2008;
- Infinite Dimensional Probability - Luminy, May 22-27, 2008;
- Workshop on Random Matrices, Bonn, January 11-18, 2008;
- International Workshop on "Free Probabilities, Operator Spaces and von Neumann Algebras", Sibiu, Romania, June 9-16, 2007;
- 6th Operator Algebras International Conference, Bucharest, August 2005;
- Joint meeting AMS-DMS-ÖMG, June 13-18, 2005, Mainz, Germany;
- AMS Meeting, October 23-24, 2004 at Northwestern University in Evanston, Illinois.

Coloquium Talks

- IMAR, Bucharest, April 2010.
- IMAR, Bucharest, July, 2009;
- University of Connecticut, February 2007;
- McGill University, February 2007;
- Georgia Institute of Technology, February 2007;
- Notre Dame University, January 2007.

Seminar Talks

- Probability Seminar, Toulouse University, May, 2010
- Probability Seminar, MIT, Nov 9th, 2009;
- Free Probability Seminar, Texas AM Oct. 6th, 2009;
- Probability Seminar, Colorado Boulder, Sept. 10th 2009;
- Probability Seminar, MIT, May 5th, 2009;
- Stochastic Seminar, Georgia Tech, October 9, 2008;
- Special Seminar, Toulouse, June 26, 2008;
- Stochastic Seminar, Georgia Tech, September 27, 2007;
- Probability Seminar, Columbia University, February 9, 2007;
- Probability and Statistics Seminar, Institute for Applied Math., University of Bonn, June 11, 2005;
- Analysis and Probability Seminar, Northwestern University, October 18, 2004;
- Analysis and Probability Seminar, Northwestern University, January 29, 2004;
- Analysis Seminar, Northeastern University, Boston, January 12, 2004;
- Analysis Seminar, MIT, November 26, 2003;
- Institut für Angewandte Mathematik, Heidelberg, Spring 1998;
- Operator Algebras Seminar, Institute of Mathematics of Romanian Academy, Series of Lectures on "Free Probability Theory", Fall 1998.

Invited Visits

- Toulouse University, May, 2010;
- Toulouse University, June, 2008;
- Analytic and Geometric Aspects of Stochastic Processes, Banff Research Center, April 10 - 15, 2004

- Penn State University, Fall 1999,
 - Institut für Angewandte Mathematik, Heidelberg, March-May 1998,
 - "Operator Algebra Workshop", Geneva, September 1997.
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Fellowships and Awards

- CURRY fellowship, The Pennsylvania State University, Fall 1999
- TEMPUS fellowship, Heidelberg, Germany, Spring 1998
- First prize in Romanian National Olympiad, 1991.

Teaching Experience

IMAR (SNSB):	Spring 2010	Master course	<i>Probability</i>
Georgia Tech:	Fall 2009	- Math7245	<i>Stochastic Processes and Stochastic Calculus II</i>
		- Math3770D	<i>Statistics and Applications</i>
		- Math3770T	<i>Statistics and Applications</i>
	Spring 2009	- Math7244	<i>Stochastic Processes and Stochastic Calculus I</i>
	Fall 2008	- Math6242	<i>Probability II</i>
	Spring 2008	- Math6241	<i>Probability I</i>
	Fall 2007	- Math3770D	<i>Statistics and Applications</i>
Northwestern:	Spring 2007	- Math310-3	<i>Introduction to Probability and Stochastic Processes III</i>
	Winter 2007	- Math310-2	<i>Introduction to Probability and Stochastic Processes II</i>
		- Math220-0	<i>Differential Calculus</i>
	Fall 2006	- Math310-1	<i>Introduction to Probability and Stochastic Processes I</i>
		- Math214-2	<i>Calculus II</i>
	Spring 2005	- Math330-3	<i>Introduction to Probability and Stochastic Processes III</i>
	Winter 2005	- Math330-2	<i>Introduction to Probability and Stochastic Processes II</i>
		- Math214-2	<i>Calculus II</i>
	Fall 2004	- Math214-1	<i>Calculus I</i>
		- Math214-3	<i>Calculus III</i>

Graduate and Undergraduate Students Supervised

Georgia Tech:	2009-2010	Linwei Xin	Ph.D student
MIT:	Summer 2001	two undergraduate students	SPUR (summer program for undergraduate)

Committees:

Georgia Tech:	- 2007-2008	Colloquium Committee
	- 2008-present	Graduate Committee

Other Professional Activities

Reviewer for:

- Annals of Statistics
 - Bernoulli
 - Probability Theory and Related Fields
 - Journal of Fourier Analysis and Applications
 - Extremes
 - MathReviews.
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