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Maxim Zyskin

Education

Ph.D. 1996 *Rutgers University*, New Brunswick, NJ. Advisors I.M. Gelfand, A.B.Zamolodchikov

Thesis: Integrable equations, and nonlinear Fourier, Radon and Abel transforms

M.Sc.. 1990 *Moscow Institute Of Physics and Technology*, Moscow, Russia.

Employment History

2007-+ Department of Mathematics, University of Texas, Brownsville, TX

Associate Professor.

2006-2007 Mathematical Institute, University of Oxford. Visiting Researcher.

2002-2006. Department of Mathematics, University of Bristol. Lecturer

2001-2002 University of Oxford, St. Catherine's College. Junior Research Fellow.

2000-2001 Basic Research Institute In Mathematical Sciences, Hewlett-Packard Labs,

Postdoctoral Fellow.

1998–1999 Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France. Visiting Researcher.

1997 – 1998 University of California, Riverside, CA. Visiting Assistant Professor.

1996–1997 Courant Institute, New York, NY. Visiting Member.

[17] Quantum Sturm-Liouville Equation, Quantum Resolvent, Quantum Integrals, and Quantum KdV, Lett. Math. Phys. **36** (1996) 427.

Papers on layered superconductors:
[18] L. N. Bulaevskii and M. V. Zyskin, Energy gap in layered superconductors, Phys. Rev. B **42**, 10230 (1990).

[19] L.N. Bulaevskii, R.M. Osgood and M.V. Zyskin, Anisotropy of the London penetration depth in layered superconductors, J. Phys.: Cond. Matter **2**, 7867 (1990)

Refereed conference paper:

Reinforcing Kevlar by thin outer graphene shell, by Karen Martirosyan, M. Zyskin, published by the TechConnect World, June 13-16, 2011, Boston, Massachusetts, U.S.A. (Jointly hosting the Nanotech 2011, Clean Technology2011, Bio Nanotech 2011 and Microtech 2011 Conferences).

Participation in award-winning grants:

Research Experience for Undergraduares, NSF, 2011

Preprints:

1. M.Zyskin, Random integral currents, preprint arXiv:1005.2224 http://xxx.lanl.gov/abs/1005.2224

2. M.Zyskin, Homotopy classification of director fields on polyhedral domains with tangent and periodic boundary conditions, with applications to bi-stable post-aligned liquid crystal displays, preprint arXiv:0902.0090 http://xxx.lanl.gov/abs/0902.0090

Study Groups with Industry

1) *Structural models for wind turbines*, problem suggested by **Teknova** (Norway), a company specializing in research and consulting in renewable energy. 73 European Study with Industry report, University of Warwick, UK, April 2010

2) *Phase Separation in the Manufacture of Organic Transistors and Photovoltaics* (problem suggested by **Merck Chemicals Ltd**). Notes of study group with industry workshop held at Imperial College, London, May 2008.

3) *Estimating volatility of property assets* (suggested by **Actuarial Profession**), 64 European Study Group with Industry report, Heriott-Watt University, UK, April 2008. http://www.maths-in-industry.org/miis/241/1/ESGI2008ReportActuarial.pdf

4) *The pull-off test for viscoelastic soft solids,* (problem suggested by **Uniliver**), 59 European Study with Industry report, University of Nottingham, UK, March 2007. http://www.maths-in-industry.org/miis/134/1/pulloff.pdf

5)T.Gould, P.G. Hjorth, M.Zyskin, Aggregation of stochastic models (problem suggested by **Defense Science and Technology Laboratory**, Ministry of Defense, UK), 56 European Study Group With Industry, University of Bath 2006. http://www.maths-in-industry.org/miis/106/1/Dstl-AggregationReport.pdf

6)Sensitivity of Markov chains for wireless protocols,(problem suggested by **British Telecom**), 56 European Study Group With Industry, University of Bath 2006.

- International Conference on Differential Equations and Mathematical Physics, Birmingham, AL, Apr 2005, "Liquid crystals in polyhedral geometry."
- NGMA meeting "Geometric Approaches to Fluids and Liquid Crystals," University of Southampton, May 2005 (invited talk)

Teaching Experience.

University of Texas, Brownsville
•College Algebra (80 students), Differential Equations (25 students), Linear Algebra (20-35 students), Advanced Linear Algebra (15 students), Statistics (25 students), Calculus 3

Teaching load: 4 courses per semester

•Organizing seminar in mathematics and its applications.

•Developing an online course in linear algebra

•Student projects integrated into teaching

University of Oxford.
Math Tutor, St Catherine's College. Tutorials in Linear Algebra, Integration and Measure, PDE's (2001/2002).

Algebraic topology class, 10 students (2006/2007).

University of Bristol.
Undergraduate.
Calculus 2 (Vector calculus, Complex Variables). 170 students class. Redesigned the course, wrote lecture notes, wrote and marked exams.
Optimization 3. 60 students. Fully responsible for the course and exams.
Tutorials in Linear Algebra, Mechanics, Calculus. 2 tutorial groups, 5 students each.
Personal Tutor to 30 students.
Graduate/Postdoctoral Level.

Organized and gave talks at seminars in Geometric and Nonlinear Analysis, Quantum Field and String Theory.

University of California.

PDE (graduate-level course for mathematics students) 30 student class.

Vector calculus for arts and sciences students. 120 students class.

Seminar in mathematical physics (graduate students and faculty).

PhD Students

Apala Majumdar, 2002-2005 My graduate student, 2005/2006; Royal Commission Research Fellowship, 2006-2008, currently Research Fellow at Oxford.

Administration Experience.

2007-2011. Graduate committee. Developing proposal on changes to emphasis in industrial mathematics of graduate mathematics program. Proposal received all necessary approvals by committees and was implemented.
Serving on ad-hoc College committee, Task Force on STEM education, and taking part in developing a proposal . Proposal was funded by UT system.