

# Ivan Soprunov

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## PERSONAL INFORMATION

Date of birth: October 17, 1974

## CURRENT EMPLOYMENT

Visiting Assistant Professor, University of Massachusetts, Amherst

## CONTACT INFORMATION

Dept of Mathematics and Statistics      *Tel:* (413) 545-2856  
University of Massachusetts              *Fax:* (413) 545-1801  
Lederle Graduate Research Tower        isoprou at math.umass.edu  
Amherst, MA 01003 USA                  www.math.umass.edu/~isoprou

## RESEARCH INTERESTS

Toric varieties, convex polytopes, sparse polynomial systems, residues, tame symbols

## EDUCATION

**University of Toronto**, Toronto, Ontario Canada

Ph.D. in Mathematics (July 2002)  
“Parshin’s symbols and residues, and Newton polyhedra”  
advisor: Askold Khovanskii

**Moscow State University**, Moscow, Russia

M.S. in Mathematics (June 1996)  
“Unitary quantum Serre’s Conjecture”  
advisors: Vyacheslav A. Artamonov, Alexandr V. Mikhalev

## PUBLICATIONS AND PREPRINTS

“Global residues for sparse polynomial systems”, submitted  
“Combinatorial construction of toric residues” (with Amit Khetan) *Ann. Inst. Fourier (Grenoble)* **55**, no. 2 (2005), 511–548  
“Toric residue and combinatorial degree” *Trans. Amer. Math. Soc.* **357** (2005), no. 5, 1963–1975  
“Residues and tame symbols on toroidal varieties” *Compositio Math.* **140** (2004) no. 6, 1593–1613  
“On combinatorial coefficients and the Gelfond–Khovanskii residue formula” in *Topics in Algebraic Geometry and Geometric Modeling*, 343–349, *Contemp. Math.* 334, AMS (2003)  
“Patching theorem in quadratic Serre’s conjecture” *Fundamental and Applied Mathematics (in Russian)* **3**, no. 1, (1997) 255–261

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## AWARDS AND FELLOWSHIPS

**The Malcolm S. Robertson Award** for excellence in research, University of Toronto, 2002

**The Daniel B. DeLury Teaching Award** for outstanding performance as a teaching assistant, University of Toronto, 1999

**Blyth Fellowship** Awarded for 2001-2002 academic year

**University of Toronto Fellowship** Awarded for 1997–2000

**Grant RFFI 96-01-00627** of Russian Academy of Sciences, 1996–1997

## INVITED TALKS AND CONFERENCE PARTICIPATION

“Residues and Newton Polytopes” (Colloquium) University of Wisconsin, Milwaukee; Penn State University, Altoona; University of Tennessee; Western Washington University; Georgia State University; Cleveland State University; University of Idaho, January–March 2006

“Global residues in the torus” Union College Mathematics Conference, Union College, Schenectady, NY, December, 2005

“Global residues for sparse polynomial systems” AMS Eastern Section Meeting, Bard College, Annandale-on-Hudson, NY October, 2005

NSF-CBMS Regional Conference on Algebraic and Topological Combinatorics of Ordered Sets, San Francisco, August 2005, participation

“Combinatorial construction of toric residues” Conference on Effective Methods in Algebraic Geometry, May–June 2005, Alghero, Italy

“Combinatorics of Toric residues” (Colloquium) Oklahoma State University; Oakland University, January–March 2005

“Toric residues and partitions of polytopes” AMS Central Section Meeting, Evanston, IL October, 2004

“Computing Toric Residues” IAS/Park City Math. Inst., research program in Geometric Combinatorics, July 2004

Workshop on Geometric Modeling and Algebraic Geometry, MSRI Berkeley, April 2004, participation

Introductory Workshop in Topological Aspects of Real Algebraic Geometry, MSRI Berkeley, January 2004, participation

Oberwolfach-Seminar: Computational Algebraic Geometry, Oberwolfach, Germany, November 2003, participation

“Toric residue as combinatorial degree” Conference on Effective Methods in Algebraic Geometry, June 2003, Universität Kaiserslautern, Germany

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“How residues help in solving systems of polynomial equations” Workshop on Computing in Algebra and Geometry, June 2003 Universität Kaiserslautern, Germany

“Combinatorial coefficients” Workshop on Algebraic Geometry and Geometric Modeling, July 2002, Vilnius University, Lithuania

“Residues and tame symbols in toric geometry” CMS Summer 2002 Meeting, Université Laval, Québec, Canada

## SOME SEMINAR TALKS

“Global Residues and Sparse Polynomial Interpolation” Valley Geometry Seminar, University of Massachusetts, Amherst, February 2006

“Computing toric residue” Commutative Algebra Seminar, University of Massachusetts, Amherst, October 2003

“Tame symbol and product of roots formula” Valley Geometry Seminar, University of Massachusetts, Amherst, October 2002

“Flags and degree of maps of polyhedral sets” Newton Polyhedra seminar, University of Toronto, October 2001

## TEACHING

### *Instructor*

University of Massachusetts **Sept 2002 – present**  
Calculus I–III, Discrete Structures, Algebra I

University of Toronto **Sept 2000 – Aug 2002**  
Linear Algebra, Algebra I, Calculus III, Complex Analysis

### *Teaching Assistant*

University of Toronto **Sept 1997 – June 2002**  
Differential Geometry, Classical Geometries, Complex Analysis, Groups and Symmetries

## OTHER PROFESSIONAL ACTIVITIES

- Co-organizer of “Commutative Algebra and Polyhedra Seminar”, UMass, Spring 2006
- Co-organizer of “Geometry and Algebra of Polyhedra Seminar”, UMass, Fall 2005
- Advising summer research project (REU) “Lattice points in Minkowski sums of polytopes” (Garret Cahill, UMass), 2005
- Reviewer for Mathematical Reviews

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- Referee (Compositio Mathematica, proceedings of Algebraic Geometry and Geometric Modeling workshop, paper for 16th Annual Int'l Conference on Formal Power Series and Algebraic Combinatorics)
- Served on Topology Basic Examination Committee, UMass, 2004
- Organizer and lecturer of *Geometry SOAR 2001*, summer camp for high-school students, U Toronto, 2001 (with K. Kaveh, E. Soprunova)
- One of the organizers of the Toronto sitting of *Tournament of Towns Mathematical Olympiad*, 1998–2001

### REFERENCES

Prof. George Avrunin, University of Massachusetts, (teaching)  
(avrunin@math.umass.edu)

Prof. Eduardo Cattani, University of Massachusetts  
(cattani@math.umass.edu)

Prof. David Cox, Amherst College  
(dac@cs.amherst.edu)

Prof. Alicia Dickenstein, Universidad de Buenos Aires  
(alidick@dm.uba.ar)

Prof. Askold Khovanskii, University of Toronto  
(askold@math.toronto.edu)

Prof. Frank Sottile, Texas A&M University  
(sottile@math.tamu.edu)

Prof. Bernd Sturmfels, University of California, Berkeley  
(bernd@math.berkeley.edu)