

# Curriculum Vitae

EVGENY MATEROV

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## Personal:

Date of birth: June 15, 1974

Citizenship: Russia

## Education:

- Diploma in Physics (Master's Degree), Krasnoyarsk State University, Russia, 1996
- Ph.D. in Mathematics, Krasnoyarsk State University, Russia, 1999  
Thesis advisor: Avgust Tsikh

## Employment:

- [09/1999 – 09/2000] Instructor, Department of Mathematics and Computer Science, Krasnoyarsk State Technical University, Russia
- [10/2000 – 10/2002] Postdoctoral Fellow (BAT IIa), Department of Mathematics University of Tübingen, Germany
- [02/2003 – 03/2004] Research member, Max-Planck-Institut für Mathematik, Germany
- [03/2004 – 06/2005] Assistant Professor, Department of Mathematics and Computer Science, Krasnoyarsk State Technical University, Russia
- [09/2005 – present] Visiting Assistant Professor, Department of Mathematics and Statistics  
University of Massachusetts, Amherst, USA

## Publications:

- *On the multiplicity of a holomorphic mapping and on a formula for the logarithmic residue for overdetermined systems.* (Russian) Complex analysis and differential equations, Krasnoyarsk. Gos. Univ., Krasnoyarsk, 1996, 145–154.
- *Reduction of the order poles of rational forms on a toric variety.* (Russian) Complex analysis and differential operators, Krasnoyarsk. Gos. Univ., Krasnoyarsk, 1998, 87–92.
- (with A.P. Yuzhakov) *The Bott formula for toric varieties and some combinatorial identities.* (Russian) Complex analysis and differential operators, Krasnoyarsk. Gos. Univ., Krasnoyarsk, 1999, 85–92.
- *The Bott formula for toric varieties*, Moscow Math. J. **2** (2002), no. 1, 163–184. Electronic version available at:  
<http://www.ams.org/distribution/mmj/vol2-1-2002/cont2-1-2002.html>
- *On the cohomological properties of hypersurfaces in toric varieties*, Ph.D thesis.
- (with V.V. Batyrev) *Toric residues and mirror symmetry*, Moscow Math. J. **2** (2002), no. 3, 435–475. Electronic version available at:  
<http://www.ams.org/distribution/mmj/vol2-3-2002/cont2-3-2002.html>
- (with V.V. Batyrev) *Mixed toric residues and Calabi-Yau complete intersections*, in *Calabi-Yau Varieties and Mirror Symmetry*, ed. by N. Yui and J. Lewis, 3–26, Fields Inst. Commun., 38, Amer. Math. Soc., Providence, RI, 2003. Electronic version available at: <http://xxx.arxiv.org/abs/math/0206057>
- *Toric residue and global duality*, preprint MPI 2004 - 5.
- *Multihomogeneous duality for quotient rings*, to appear in *Symposium Geometry and Analysis on Complex Algebraic Varieties*, RIMS Kokyuroku series.
- (with D. Cox) *Tate Resolutions for Segre Embeddings*, submitted to *Algebra and Number Theory*.

## Research interests:

Algebraic Geometry, Commutative Algebra and Combinatorics:

Currently I'm working on an explicit description of the terms and differentials of Tate resolutions of sheaves and their relations to Bezoutians, hyperdeterminants and Koszul cohomology. My primary research interests are in Mirror Symmetry, toric residues, cohomology of complete intersections in toric varieties. Also, I am interested in different aspects of integer-point enumeration in polyhedra and related questions.

## Selected talks:

- *One estimate for dimension of  $H^n(\mathbb{C}^n \setminus V, \mathbb{C})$* , International Congress of Mathematicians (ICM 98), Berlin, Germany, August 1998.
- *The Bott formula for toric varieties and its applications*, Géométrie Algébrique en Liberté (GAEIL IX), Luminy, France, March 2001.
- *Toric residue mirror conjecture*, Pluricomplex seminar, Stockholm University, Sweden, April 2002.
- *Differential forms on toric varieties and combinatorial dualities*, Algebraic/Complex Geometry Seminar, MPIfM, Bonn, Germany, November 2003.
- *Toric Residues and Global Duality*, Seminar on Complex Analysis Bonn/Wuppertal, Bonn, Germany, January 2004.
- *Toric Duality for Quotient Rings*, Algebra-Geometry-Combinatorics Seminar, San Francisco State University, USA, March 2006.
- *Bezoutians and Tate resolutions*, Representation Theory and Related Topics Seminar, Northeastern University, Boston, USA, March 2007.
- *Tate Resolutions for Products of Projective Spaces*, Colloquium, Oklahoma State University, Stillwater, USA, August 2007.
- *Tate Resolutions*, Special Session: Toric Varieties Fall Eastern Section Meeting of the American Mathematical Society, Rutgers University, New Brunswick, USA, October 2007.

## References:

Prof. Eduardo Cattani

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and Statistics (Head of Department)  
University of Massachusetts at Amherst  
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Prof. David Cox

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and Computer Science  
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Prof. Victor V. Batyrev

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Universität Tübingen  
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Prof. Mikael Passare

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Prof. Alicia Dickenstein

Departamento de Matemática  
Facultad de Cs. Exactas y Naturales  
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Prof. Eric Sommers

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and Statistics  
University of Massachusetts at Amherst  
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## Grants and awards:

- [1993] "Soros student" fellowship
- [2000 – 2002] Postdoctoral Fellow (BAT IIa), Germany
- [2003 – 2004] Research fellowship, Max-Planck-Institut für Mathematik, Germany
- [2001 – 2007] Russian Foundation for Basic Research, RFFI
- [2005 – 2007] Japanese Society for the Promotion of Science and RFFI

## Other:

Referee for *Compositio Mathematica*.

## Workshops and conferences participation:

- International Congress of Mathematicians (ICM 98), Berlin, Germany, August 1998.
- 3rd European Congress of Mathematics, Barcelona, Spain, July 2000.
- DVM-Seminar *Characteristic Classes of Connections, Riemann-Roch Theorems, Analogies with epsilon-Factors*, Mathematisches Forschungsinstitut Oberwolfach, Germany, November 2000.
- Oberwolfach meeting *Combinatorial Convexity and Algebraic Geometry*, Mathematisches Forschungsinstitut Oberwolfach, Germany, January 2001.
- *Géométrie Algébrique en Liberté* (GAEL IX), CIRM, Luminy, Marseille, France, March 2001.
- NORDAN annual conference 2001, Oslo, Norway, June 2001.
- EAGER annual conference 2001 at Sophus Lie center, Nordfjordeid, Norway, June 2001.
- Workshop *Algebraic Aspects of Mirror Symmetry*, Kaiserslautern, Germany, June 2001.

- *Géométrie Algébrique en Liberté* (GAEL X), CIRM, Luminy, Marseille, France, March 2002.
- *Higher Dimensional Complex Geometry*, Newton Institute, Cambridge, UK, June-July 2002.
- Oberwolfach meeting *Combinatorial Convexity and Algebraic Geometry*, Mathematisches Forschungsinstitut Oberwolfach, Germany, January 2003.
- Conference *Moduli spaces and superpotentials*, UPenn, Philadelphia, October 2005, USA.
- Workshop *Generalized McKay Correspondences and Representation Theory*, MSRI, March 2006, USA.
- Conference *Integer points in polyhedra. Geometry, Number Theory, Representation Theory, Algebra, Optimization, Statistics*, Snowbird, UT, June 2006, USA.
- Conference *Algebraic and Analytic Combinatorics*, AMS Fall Eastern Meeting, University of Connecticut, Storrs, Connecticut, October 2006, USA.
- Conference *Analysis and Geometry on Complex Varieties*, August 2007, Krasnoyarsk, Russia.
- Special Session: *Toric Varieties*, Fall Eastern Section Meeting of the American Mathematical Society, Rutgers University, New Brunswick, October 2007, USA.

## Courses taught at UMass, Amherst

- Calculus I (Math 131): Fall 2005.
- Calculus II (Math 132): Spring 2006.
- Calculus III (Math 233): Fall 2006, Spring 2007 (Honors Section), Fall 2007.
- Introduction to Discrete Structures (Math 455): Spring 2007.
- Advanced Multivariate Calculus (Math 425): Fall 2007.

## Courses taught at Krasnoyarsk State Technical University (SFU)

- Calculus II: Summer Semester 1999 – Lectures, Seminars.
- Complex Analysis: Summer Semester 1999 – Lectures, Seminars; Winter Semester 2000 – Lectures, Seminars
- Discrete Mathematics: Summer Semester 2004 – Lectures.
- Calculus III: Winter Semester 2004/2005 – Lectures.
- Linear Algebra I: Winter Semester 2004 – Lectures; Winter Semester 2000 – Lectures, Seminars.
- Mathematical Logic: Summer Semester 2004, Winter Semester 2005 – Lectures, Seminars.

## Educational Publications:

- (with A.V. Krotov and M.I. Sokolov) *Laplace Transform and its Applications in mathematical Physics.* (in Russian) Krasnoyarsk, 1999.
- (with A.V. Krotov) *Linear Algebra: Lectures and Problems.* (in Russian) Krasnoyarsk, 2000.