

Curriculum Vitae

Lev A. Borisov

Mathematics Department, Rutgers University,
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Personal

Born in 1971 in Minsk, Belarus
US citizen

Education

5/96 PhD in mathematics, University of Michigan
 Advisor: Igor Dolgachev. Thesis title:
 A finiteness theorem for subgroups of $Sp(4, Z)$
6/92 BS in mathematics
 Moscow State University, Russia

Professional Experience

Since 7/09 Professor I
 Rutgers University
4/08-7/09 Professor
 University of Wisconsin, Madison
7/04-3/08 Associate Professor
 University of Wisconsin, Madison
9/01-6/04 Assistant Professor
 University of Wisconsin, Madison
9/01-6/02 On leave from University of Wisconsin, Madison
9/97-6/02 Ritt Assistant Professor
 Columbia University
8/96-7/97 Postdoctoral Fellow
 Mathematical Sciences Research Institute
 Berkeley, California
1/94-5/95 Teaching Assistant
 University of Michigan

Research specialty

Algebraic geometry and related areas

Awards

5/08-4/11	NSF grant DMS-0758480
5/05-4/08	NSF grant DMS-0456801
4/02-3/05	NSF grant DMS-0140172
8/96-7/97	MSRI Postdoctoral Research Fellowship
9/95-5/96	Alfred P. Sloan Doctoral Dissertation Fellowship
7/87	First prize at the International Math Olympiad

Graduate Student Advising

Michael Rose, PhD defended Summer 2007
Zheng Hua, PhD defended Spring 2009
Hanjun Kim, PhD defended Summer 2009

Publications

- , R. Jin, *Finding integral diagonal pairs in a two dimensional \mathcal{N} -set*, Proc. Amer. Math. Soc. 139 (2011), no. 7, 2431–2434.
- , S. Salamon, J. Viaclovsky, *Twistor geometry and warped product orthogonal complex structures*, Duke Math. Journal, 156 (2011), no. 1, 125-166.
- , J. Viaclovsky, *Threefolds of order one in the six-quadric*, Proceedings of the Steklov Institute of Mathematics, 264 (2009), 18–29.
- , Z. Hua, *On the conjecture of King for smooth toric Deligne-Mumford stacks*, Adv. Math. 221 (2009), no. 1, 277–301.
- , Andrei Caldararu, *The Pfaffian-Grassmannian derived equivalence*, J. Algebraic Geom. 18 (2009), no. 2, 201–222.
- , A. Libgober, *Higher elliptic genera*, math.AG/0602387, Math. Res. Lett. 15 (2008), no. 3, 511–520.
- , Z. Hua, *On Calabi-Yau threefolds with large nonabelian fundamental groups*, Proc. Amer. Math. Soc. 136 (2008), no. 5, 1549–1551.
- , R.P. Horja, *Mellin-Barnes integrals as Fourier-Mukai transforms*, Adv. Math. 207 (2006), no. 2, 876–927.
- , R.P. Horja, *On the K -theory of smooth toric DM stacks*, Snowbird lectures on string geometry, 21–42, Contemp. Math., 401, Amer. Math. Soc., Providence, RI, 2006.
- , *On Wronskians of weight one Eisenstein series*, J. Number Theory 121 (2006), no. 1, 132–152
- , *Holomorphic Eisenstein series with Jacobian twists*, Algebraic geometry, 1–15, Contemp. Math., 422, Amer. Math. Soc., Providence, RI, 2007
- , L. Chen, G. Smith, *The orbifold Chow ring of toric Deligne-Mumford stacks*, J. Amer. Math. Soc. 18 (2005), no. 1, 193–215

- , A. Libgober, *McKay correspondence for elliptic genera*, Annals of Math. 161 (2005), No. 3, 1521–1569
- , *Higher Stanley-Reisner rings and Toric Residues*, Compositio Math. 141 (2005), no. 1, 161–174
- , *Chiral rings of vertex algebras of mirror symmetry*, Math. Z., 248 (2004), 3, 567–591.
- , E. Mukhin, *Self-self-dual spaces of polynomials*, Adv. Math., 190 (2004), no. 1, 77–118.
- , A. R. Mavlyutov, *String cohomology of Calabi-Yau hypersurfaces via Mirror Symmetry*, Adv. Math. 180 (2003), no. 1, 355–390.
- , P. E. Gunnells, *Toric modular forms of higher weight*, J. Reine Angew. Math. 560 (2003), 43–64.
- , A. Libgober, *Elliptic genera of singular varieties, orbifold elliptic genus and chiral deRham complex*, Mirror symmetry, IV (Montreal, QC, 2000), 325–342, AMS/IP Stud. Adv. Math., 33, Amer. Math. Soc., Providence, RI, 2002.
- , A. Libgober, *Elliptic genera of singular varieties*, Duke Math. J. 116 (2003), no. 2, 319–351.
- , P. E. Gunnells, *Wonderful blowups associated to group actions*, Selecta Math, 8 (2002), no. 3, 373–379.
- , P. E. Gunnells, S. Popescu, *Elliptic functions and equations of modular curves*, Math. Ann. 321 (2001), no. 3, 553–568.
- , P. E. Gunnells, *Toric modular forms and nonvanishing of L-functions*, J. Reine Angew. Math. 539 (2001), 149–165.
- , P. E. Gunnells, *Toric varieties and modular forms*, Invent. Math. 144 (2001), no. 2, 297–325.
- , *Vertex algebras and mirror symmetry*, Comm. Math. Phys. 215 (2001), no. 3, 517–557.
- , A. Libgober, *Elliptic genera of toric varieties and applications to mirror symmetry*, Invent. Math. 140 (2000), no. 2, 453–485.
- , *String cohomology of a toroidal singularity*, J. Algebraic Geom. 9 (2000), no. 2, 289–300.
- , *A finiteness theorem for subgroups of $\mathrm{Sp}(4, Z)$* , Algebraic geometry, 9. J. Math. Sci. (New York) 94 (1999), no. 1, 1073–1099.
- , M. B. Halpern, C. Schweigert, *Systematic approach to cyclic orbifolds*, Internat. J. Modern Phys. A 13 (1998), no. 1, 125–168.
- V. V. Batyrev, —, *Mirror duality and string-theoretic Hodge numbers*, Invent. Math. 126 (1996), no. 1, 183–203.
- V. V. Batyrev, —, *On Calabi-Yau complete intersections in toric varieties*, Higher-dimensional complex varieties (Trento, 1994), 39–65, de Gruyter, Berlin, 1996.
- V. V. Batyrev, —, *Dual cones and mirror symmetry for generalized Calabi-*

- Yau manifolds*, Mirror symmetry, II, 71–86, AMS/IP Stud. Adv. Math., 1, Amer. Math. Soc., Providence, RI, 1997.
- A. A. Borisov, —, *Singular toric Fano three-folds*, Russian Acad. Sci. Sb. Math. 75 (1993), no. 1, 277–283.

Preprints

- , R.M. Kaufmann, *On CY-LG correspondence for (0,2) toric models*, arXiv:1102.5444, accepted for publication.
- , R.P. Horja, *On the better behaved version of the GKZ hypergeometric system, with R.P. Horja*, arXiv:1011.5720.
- , *Berglund-Hübsch mirror symmetry via vertex algebras*, arXiv:1007.2633.
- E. Bach, —, *Absorption Probabilities for the Two-Barrier Quantum Walk*, preprint arXiv:0901.4349.
- , *Introduction to the vertex algebra approach to mirror symmetry*, math.AG/9912195.
- , *Towards the Mirror Symmetry for Calabi-Yau complete intersections in Gorenstein Toric Fano Varieties*, math.AG/9310001.

Seminar/colloquium talks

Columbia University, Massachusetts Institute of Technology, Northwestern University, Rutgers University, University of Illinois at Chicago, University of Illinois at Urbana-Champaign, University of Michigan at Ann Arbor, University of Wisconsin-Madison, Boston University, McGill University, SUNY at Stony Brook, University of Minnesota, University of Pennsylvania, Yale University, Indiana University-Purdue University Indianapolis, Oklahoma State University, University of Massachusetts at Amherst, University of Utah

Miscellaneous

- Co-organizer of Geometry, Symmetry and Physics seminar at Rutgers University
- Co-organizer of algebraic geometry seminar at University of Wisconsin 9/2005–5/2009
- Afternoon talk at Summer Institute in Algebraic Geometry
- Talks at Oberwolfach, MSRI
- Co-organizer of math/physics seminar at University of Wisconsin in 2002-2003 academic year
- Co-organizer of a syzygies seminar at Columbia University in 2001-2002 academic year
- Co-organizer of the algebraic geometry section of AMS meeting at Columbia University in November of 2000
- Reviewer for Mathematical Reviews, referee for various journals
- Editor of the Proceedings of AMS