

# CURRICULUM VITAE

## MISHA VERBITSKY

**Born:** June 20, 1969, Moscow, USSR

**Citizenship:** Russia

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**Education:**

- 1990 Moscow State University
- 1995 Ph.D. Harvard University

**Positions Held:**

**1990-91:** Visiting Scholar, MIT

**1991-95:** Graduate Student, Harvard University

**1996-97:** Institute of Advanced Study, Princeton (postdoc)

**1997-99:** European Post-Doctoral Institute (postdoc)

**2003-10:** Institute of theoretical and experimental physics, Moscow  
(research affiliate)

**2002-07:** Glasgow University, EPSRC Advanced Fellow (associate  
level research position)

**2010–** Faculty of Mathematics, Higher School of Economics (full  
professor)

**1996–** Moscow Independent University (full professor since 2013)

**2010–** Laboratory of algebraic geometry and its applications, HSE  
(chair, vice-chair).

**2015–** Université libre de Bruxelles (charge de cours).

**Ph.D. Thesis:** “Cohomology of compact hyperkaehler manifolds”, under supervision of David Kazhdan.

**Visiting:**

- 2008— University of Tokyo, IPMU (“joint appointment”: a visiting professor position).
- Visitor at IHES (1997, 2006), MPI, Bonn (1999-2000, 2006).

**Grants, awards and honors:**

- Simons-IUM Fellowship (2011, 2013, 2015, 2016)
- ICM section talk (2014)
- CRDF grants RM1-2087 (as a principal co-investigator) and RM1-2354-MO02 (a grant for international joint research group offered by an international disarmament foundation).
- EPSRC grant GR/R77773/01 (Advanced Research Fellow: a 5 years, 150,000 pounds British research grant).
- AG Laboratory NRU-HSE, RF government grant, ag. 11.G34.31.0023 (a 5 million dollar grant offered for the research laboratory lead by Fedor Bogomolov).
- RSCF grant 14-21-00053 for fundamental research as the lead investigator (a 20 million roubles grant for a mid-size research collective).

**Papers:** See <http://scholar.google.co.il/citations?hl=en&user=8KhODVoAAAAJ>. I wrote 91 papers, 53 of them in collaboration, a monograph and a textbook. 79 of these papers were published in peer-refereed publications, the rest is available from [arxiv.org](http://arxiv.org).

**Books:**

- “Hyperkaehler manifolds”, by M. Verbitsky and D. Kaledin, *Mathematical Physics*, 12. International Press, 1999. iv+257 pp.
- “Topology for first-year students”, (in Russian), 370 pp, Independent University of Moscow Press (2017).

**Conference talks:** More than 70 invited talks in international conferences (Oberwolfach, ICTP, CIRM, MSRI, CRM, NYU, SCGP, Edinburgh, Durham, Rome, Bonn, Bucharest, Moscow, Cambridge, Poland, Singapore, Argentina, Brasil, India, Korea, Thailand). A small sampling of conference talks for the past 3 years:

- 2016**
- Simons Symposium on Geometry Over Nonclosed Fields, 20.04.2016, “Constructing automorphisms of hyperkähler manifolds”.
  - 1-st International Conference on Differential Geometry, 14.04.2016, Fez, Morocco, plenary talk “Degenerate twistor deformations”
  - Twenty-third Gökova Topology/Geometry conference, 30.05.2016-4.06.2016, Gökova, Turkey, a minicourse of 4 lectures, “Unobstructed symplectic packing” and “Teichmüller spaces and moduli of geometric structures”.
  - Conference: Hitchin 70: A celebration of Nigel Hitchin’s 70th birthday in honour of his contributions to mathematics (QGM, Aarhus University), 05.09.2016, “Ergodic complex structures”.
  - Derived categories and Chow groups of hyperkaehler and Calabi-Yau varieties, Simons Center for Geometry and Physics, 20.09.2016, “Perverse coherent sheaves on hyperkähler manifolds and Weil conjectures”.

**2015**

- Mathematische Arbeitstagung 2015 (MPIM, Bonn), 01-07-2015, “Ergodic action on the moduli of complex structures”.
- Holomorphic dynamics school and Hyperbolicity in algebraic geometry conference, Ilhabela, Brazil, January 2016, minicourse of 3 lectures and a talk “Moduli of complex structures and Ratner theory” and “Symplectic packing and hyperbolicity”.
- Workshop on Hyperkaehler Geometry, KIAS, Seoul, 05.03.2015, “Symplectic packing and hyperkähler geometry”.
- Distribution of Rational and Holomorphic Curves in Algebraic Varieties, Banff, 17.03.2015, “MBM classes on hyperkähler manifolds”.
- Geometry Over Non-closed Fields: Geometry and Arithmetic of Holomorphic Symplectic Varieties, Simons Symposia 2015, 25.03.2015, “Proof of Morrison-Kawamata cone conjecture for holomorphically symplectic manifolds”.
- Workshop in Dynamics and Geometry, 17.08.2015, KIAS, Seoul, Korea, “Limits of hyperkähler metrics and geometry of Kähler cone”

- Collapsing Calabi-Yau Manifolds, Simons Center for Geometry and Physics, 03.09.2015, “Limits of hyperkähler metrics”.
- Journées Complexes Lorraines 2015, 29.09.2015, l’Institut Élie Cartan, Nancy, France, “Transcendental Hodge algebra”.
- Manifolds and Related Structures in Algebraic and Differential Geometry, CIRM, Levico Terme (Trento), 05.11.2015, “Construction of automorphisms of hyperkähler manifolds”.

## 2014

- ”Moduli spaces of irreducible symplectic varieties, cubics and Enriques surfaces”, Laboratoire Painlevé, Lille, 26.03.2014, “Hyperkähler manifolds are non-hyperbolic”.
- ”Complex Geometry and Lie Groups”, Torino, 16.03.2014, “Hypercomplex manifolds of quaternionic dimension 2 and HKT-structures”.
- Conference on The Geometry, Topology and Physics of Moduli Spaces of Higgs Bundles, National University of Singapore, 05.08.2014, “Holography principle and Moishezon twistor spaces”.
- Topology of Torus Actions and Applications to Geometry and Combinatorics (ICM Satellite conference) 10.08.2014, “Complex subvarieties in homogeneous complex manifolds”.
- SEOUL ICM 2014, 18.08.2014, “Teichmüller spaces, ergodic theory and global Torelli theorem”
- Simons Center for Geometry and Physics, Stony Brook, G2 manifolds, 05.09.2014, “Kähler structure on the knot space of a G2-manifold”.
- Real and complex differential geometry, University of Bucharest, 11.09.2014, “Kähler threefolds without subvarieties”
- Joint Meeting of the German Mathematical Society (DMV) and the Polish Mathematical Society (PTM), Poznan, 19.09.2014, “Holography principle and Moishezon twistor spaces”.
- Complex Geometry, Analysis and Foliations: a conference dedicated to the memory of M. Brunella, ICTP, Trieste, 01.10.2014, “Kähler threefolds without subvarieties”.
- Lagrangian submanifolds and related topics, University of

Milan, 04.12.2014, “Pseudoholomorphic curves with boundaries on holomorphic Lagrangian subvarieties”.

**Editorship:**

- Member of the Editorial Advisory Board for “Complex Manifolds” (De Gruyter).
- Member of the Editorial Board for *Épjournal de Géométrie Algébrique* (episciences.org).

**Research interests:** Algebraic geometry, differential geometry, hyperkähler geometry, calibrations on manifolds, ergodic theory, geometric group theory, hyperbolic geometry, quaternionic structures, CAT-spaces, locally conformally Kähler manifolds, Yang-Mills theory, Hodge theory, symplectic topology.

**Ph. D. students:**

**Andrey Soldatenkov:** completed degree in 2014 (now in Bonn University).

**Nikon Kurnosov:** ongoing.

**Artour Tomberg:** ongoing (jointly with Jacques Hurtubise).

**Family status:** Married, with four children, Sima, Alesha, Masha, Vitya, 26, 25, 16 and 11 years old. My wife, Yulya Fridman, born in 1970, B. Sc., is a researcher in physics.

**Teaching:** Designed a curriculum for first- and second-year math majors (algebra, number theory, analysis, topology). Gave lectures for first-year undergraduate students based on this curriculum (2004, 2008). Wrote problem-based undergraduate text-books on measure theory, Galois theory and point-set topology. Gave graduate courses on algebraic geometry, Kähler manifolds, Gromov hyperbolic groups, Mori theory, complex surfaces, locally conformally Kähler manifolds, differential geometry, spinors and elliptic equations. Gave undergraduate courses on topology, analysis on manifolds, measure theory, Galois theory, CAT-spaces, algebraic geometry and geometric group theory.

**Teaching stuff online:** All teaching materials for ULB are available here <http://verbit.ru/ULB/> (slides, assignments, handouts). Teaching materials for HSE: <http://bogomolov-lab.ru/KURSY/> (in Russian).