

## CURRICULUM VITAE

Nikon Kurnosov

### Contact information

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### Personal information

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**Born:** December 15, 1989, Moscow, USSR  
**Citizenship:** Russia (Russian Federation)

### Education

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**Higher School of Economics**, Moscow, Russia  
Ph.D. in Mathematics, 01.2017  
Thesis: *Betti numbers and trianalytic subvarieties of hyperkähler manifolds*  
Advisor: Misha Verbitsky

**Lomonosov Moscow State University**, Moscow, Russia  
M.S. in Chemistry and Materials science, 06.2013  
Advisor: Vladimir Dolzhenko

**Independent University of Moscow**, Moscow, Russia  
M.S. in Mathematics, 05.2012  
Thesis: *Flat connections on nilmanifolds*  
Advisor: Misha Verbitsky

**Lomonosov Moscow State University**, Moscow, Russia  
B.S. in Materials science, 06.2011  
Advisor: Vladimir Dolzhenko

### Academic Positions

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2017–present	Postdoctoral Research and Teaching Associate, University of Georgia
2017–present	Research fellow, Laboratory of Algebraic Geometry and its applications, Department of mathematics, National Research University Higher School of Economics
2014–2017	Student-researcher, Laboratory of Algebraic Geometry and its applications, National Research University Higher School of Economics
2012–2012	Student-assistant, Institut für Anorganische Chemie, Universität Bonn

### Research Interests

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Algebraic geometry, complex geometry, hyperkähler geometry, Hodge theory, Calabi-Yau manifolds, automorphisms, symplectic varieties, Mirror symmetry

## Grant, Fellowships and Awards

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- 2018–2021 Basis Foundation Grant  
2018–2020 RFBR Grant for Young Researchers  
2018–2020 Simons Travel grant  
2016–2017 Grant for Young Russian Mathematicians (Dinastiya Foundation)  
2015 “Young Russian Mathematician” Contest winner  
2015–2016 Grant for Research Training Group “Geometry on complex manifolds” (supervised by M. Verbitsky), member  
2014–2017 RSF grant, geometry of special manifolds (PI: M. Verbitsky), member  
2014–2016 The President grant for the young Ph.D.’s (collaborator with S.Galkin and A. Soldatenkov)  
2013 The Simons Foundation grant  
2013 Awards for the best Thesis in inorganic chemistry, and the best thesis in materials science (Lomonosov Moscow State University)  
2012 R.L. Dobrushin Fellowship for students  
2010 R.L. Dobrushin Fellowship for students

## Papers

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1. **Kurnosov N.**, Soldatenkov A., Verbitsky M., *Kuga-Satake construction and cohomology of hyperkahler manifolds*, *Advances in Mathematics*, **351**, pp. 275–295, 2019.
2. **Kurnosov N.**, *Absolutely trianalytic tori in the generalized Kummer variety*, *Advances in Mathematics*, **298**, **6**, pp. 473–483, 2016, arXiv:1504.08010v2 [math.AG].
3. **Kurnosov N.**, *An inequality for Betti numbers of hyper-Kähler manifolds of dimension 6*, *Mathematical Notes.*, **99**, **1**, pp. 330–334, 2016.
4. **Kurnosov N.**, *Boundness of  $b_2$  for hyperkähler manifolds with vanishing odd-Betti numbers*, *Math. Rev.*, **1**, 2020, pp. xx.
5. **Kurnosov N.**, *Constraints on Betti numbers of hyperkähler sixfolds with  $b_2 = 23$* , Proceedings of MiniPAGES, Warsaw, to appear.
6. **Kurnosov N.**, *Subvarieties and cohomology of hyperkähler manifolds*, PhD Thesis, Steklov Institute, in Russian.

## Preprints and submitted papers

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1. **Kurnosov N.**, Verbitsky M., *Deformations and BBF form on non-Kähler holomorphically symplectic manifolds*, arXiv:1908.05258v1 [math.AG], submitted to Publ. IHES.
2. **Kurnosov N.**, Yasinsky E., *Automorphisms of hyperkahler manifolds and groups acting on  $CAT(0)$  spaces*, arXiv:1810.09730v1 [math.AG], submitted to Manuscripta.
3. Bogomolov F., **Kurnosov N.**, *Lagrangian fibrations of IHS fourfolds*, arXiv:1810.11011v1 [math.AG], submitted to EJM.
4. Buonerba F., Bogomolov F., **Kurnosov N.**, *Classifying  $VII_0$  surfaces with  $b_2 = 0$  via arithmetic groups*, arXiv:1709.00062v2 [math.AG], submitted to EJM

## Chemistry

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1. **Kurnosov N.**, *Synthesis of thienylpyrazoles*, *HGS*, **16**, pp. 14–21, 2015.
2. Dolzhenko V., Kiselev Yu., **Kurnosov N.**, *Synthesis and Structure of New Copper(II) Nitrate Complexes with 2,6-Bis(pyrazolyl)pyridine*, *Z. Anorg. Allg. Chem.*, **2014**, **640**, (2), 347–351.
3. Bezzubov S., Dolzhenko V., **Kurnosov N.**, Zharinova I., Kovalenko I., Kiselev Yu., *(2-Benzoyl-1-phenylethenolato-k2O, O') bis [2-(1-phenyl-1H-benzimidazol-2-yl) phenyl-kC1] iridium (III) dichloromethane disolvate*, *IUCrData*, **2016**.

## Other Publications

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- LXXV Moscow Mathematical Olympiad (as one of authors), M.: MCCME, 2012, 72 pages.  
LXXVI Moscow Mathematical Olympiad (as one of authors), M.: MCCME, 2013, 78 pages.  
LXXIX Moscow Mathematical Olympiad (as one of authors), M.: MCCME, 2016, 65 pages.  
Problems of Moscow Chemical Tournaments (as one of authors), M.: MCCME, 2015, 44 pages.  
Problems of Moscow Chemical Tournaments (as one of authors), M.: MCCME, 2016, 48 pages.

## Invited Talks

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- 2019 Selected topics of Simons Semester in Banach Center, Warsaw  
2019 Algebraic geometry workshop, CINVESTAV, Mexico  
2019 Quantum Toric Geometry and Chimeras, University of Miami  
2019 Algebraic geometry seminar, Perimeter Institute  
2019 Geometry seminar, Western University, London, Canada  
2019 Geometry seminar, PUC, Rio de Janeiro  
2019 Geometry seminar, Impa, Rio de Janeiro  
2019 Geometry seminar, IMPAN, Krakow  
2019 Algebraic Geometry seminar, UC Davis  
2019 Algebraic Geometry seminar, UC Irvine  
2019 ADIMoM Conference, Toronto  
2019 Algebraic Geometry seminar, Courant Institute  
2018 SFB Kolloquium, University of Mainz  
2018 Algebraic Geometry seminar, University of Basel  
2018 Algebraic Geometry seminar, Courant Institute  
2018 Algebraic Geometry seminar, University of Toronto  
2018 Algebraic Geometry seminar, Northwestern University  
2018 Algebraic Geometry seminar, Courant Institute  
2018 Geometry seminar, Impa, Rio de Janeiro  
2018 10th Anniversary of department of mathematics, HSE  
2018 Workshop on Calabi-Yau and related geometry, Krakow  
2018 Algebra/Algebraic Geometry seminar, Kansas State University  
2018 Algebraic Geometry seminar, UPenn  
2018 Algebraic Geometry seminar, Stony Brook  
2018 Colloquium, Florida International University  
2018 Algebraic Geometry seminar, Emory University  
2017 Algebraic Geometry Conference in honor of Griffiths, Oaxaca, Mexico  
2017 Hyperkähler Saturday, Moscow, Russia  
2017 Algebraic Geometry seminar, Courant Institute  
2017 Geometry and Topology conference in Gökova, Turkey  
2017 Workshop on holomorphic symplectic varieties, University of Lille  
2017 ULB Geometry seminar, Brussels  
2016 Geometric Analysis and Control Theory, Novosibirsk, Sobolev Institute  
2016 Geometry and Topology seminar, Institute of mathematics, Novosibirsk  
2016 Vitushkin seminar, Lomonosov Moscow State University  
2016 Geometry seminar, University of Geneva  
2016 Seminar "Hodge structures and rationality problems", University of Zürich  
2016 IUM, IITP & Poncelet Laboratory seminar  
2016 Postnikov Seminar, Lomonosov Moscow State University  
2016 School-Conference on algebraic geometry, complex analysis, and computer algebra, Koryazhma, Northern Federal University  
2016 Simons semester, miniPages, Warsaw  
2016 British Algebraic Geometry meeting (BrAG), University of Edinburgh  
2016 Algebraic Geometry seminar, NYU, Courant Institute  
2015 Conference "Workshop on almost hermitian and contact geometry", Bedlewo, Poland

### Invited Talks (continued)

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- 2015 MAGIC seminar, Imperial College, London
- 2015 School-Conference on algebraic geometry and complex analysis for young Russian mathematicians, Koryazhma, Northern Federal University
- 2015 Conference "Hyperkahler Saturday", Moscow, Russia
- 2015 Algebra/ Algebraic Geometry seminar, University of Sheffield
- 2015 ULB Geometry seminar, ULB, Brussels
- 2015 Hyperbolicity-2015, Ilhabela, Brazil
- 2014 British Algebraic Geometry meeting (BrAG), University of Warwick
- 2014 Baikal Lake conference, Maksimikha, Republic of Buryatiya
- 2014 The School "Carnival Differential Geometry", Torino
- 2013 Summer School-Conference on problems of algebraic geometry and complex analysis, Yaroslavl'
- 2012 Workshop on complex geometry and foliations, Moscow

### Teaching Experience

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- 2017–present Postdoctoral, UGA
  - Calculus I (Math 2250)
  - Calculus III (Math 2500)
- 2013–2016 Teaching Assistant, HSE
  - Reading course on Torelli theorem
  - Modular forms (BS & MS course)
  - Lie groups and algebras (BS & MS course)
  - Kähler geometry (Math in Moscow course)
  - Calculus I (BS course)
  - Algebra I (BS course)
  - Algebra II (BS course)
- 2011–2016 Teaching Assistant & Instructor, IUM
  - Measure Theory
  - Algebra I
  - Algebra II
  - Algebra III
  - Calculus I

### Lecture series and Expository Talks

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- 2013 "Groups in Physics and Chemistry", Summer School "Contemporary Mathematics"
- 2014 "Pelle's equation & Dirichlet unit Theorem", Summer School "Contemporary Mathematics"
- 2016 "Cubic forms", Summer School "Contemporary Mathematics"
- 2018 "Counting points on curves", Summer School "Contemporary Mathematics"
- 2018 Symmetry groups in nature (Math Club, UGA)
- 2018 Integer points & Volumes of polyhedra (Math Club, UGA)
- 2019 Fractals (Math Club, UGA)

### Academic Services

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#### *Professional Service*

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- 2017 Research mentor of Term work, HSE
- 2017 Diploma thesis reviewer, HSE
- 2016 Vice-chair of "High Probe" Olympiad, HSE
- 2015 Vice-chair of "High Probe" Olympiad, HSE
- 2013–2017 Jury Member of Moscow Mathematical Olympiad
- 2011–2017 Jury Member of Chemical Tournament
- 2012–2017 Jury Member of Tournament of Towns
- 2012–2016 Jury Member of Russian Geometry Olympiad

2015–present Referee for: EJM – Adv. Math. – Izvestiya Math – Tetrahedron – Zentrablath math.

#### *Conferences Organized*

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- 2019 Co-organizer, Summer School “Algebra and Geometry” in Yaroslavl’
- 2019 Lutsinofest
- 2019 Workshop “ Hyperkähler Saturday”, Moscow
- 2018 Co-organizer, Summer School “Algebra and Geometry” in Yaroslavl’
- 2018 Lutsinofest
- 2017 Hyperkähler Saturday, HSE
- 2017 Co-organizer, Summer School “Algebra and Geometry” in Yaroslavl’, July 25-31, 2017.
- 2017 Co-organizer, Summer School on Fontanka: Geometry 2017
- 2017 Lutsinofest
- 2017 Co-organizer, Spring school-conference Birational geometry in positive characteristic, HSE
- 2016 Co-organizer, School-Conference Groups of birational automorphisms, HSE
- 2016 Co-organizer, School Introduction to birational geometry, HSE
- 2016 Lutsinofest
- 2016 Co-organizer, Spring School-Conference Surfaces in positive characteristic, HSE
- 2015 Co-organizer, Workshop on Projective Algebraic Geometry (celebrating Fyodor Zak’s 65th birthday), Moscow, Russia

#### *Seminars Organized*

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- 2017-present Co-organizer of Algebraic Geometry seminar, UGA
- 2013-2017 Co-organizer of Complex structures on manifolds seminar, HSE
- 2015-2017 Co-organizer of Seminar of Laboratory of algebraic geometry and its applications, HSE

#### **Languages**

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Russian, English, Deutsch (beginner)

#### **Computer Skills**

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Expert with  $\LaTeX$ , HTML, programming in C, Pascal, Python and PARI/GP, graphic design in PS

#### **Hobbies**

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Football: formal player of department’s team at Lomonosov Moscow State, captain of FC Forza (MSU Football Championship)

Art & Music  
Numismatics.

#### **References**

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Misha Verbitsky (*doctoral advisor*), IMPA, Rio de Janeiro & Higher School of Economics, Laboratory of Algebraic Geometry, verbit2000@gmail.com

Dmitry Kaledin, Steklov Institute, kaledin@mi.ras.ru

Fedor Bogomolov, Courant Institute & Laboratory of Algebraic Geometry, HSE, bogomolo@cims.nyu.edu

Maurice Hendon (*teaching reference*), University of Georgia, mhendon@uga.edu

Valery Alexeev, University of Georgia, valery@uga.edu