

Igor Krylov

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Employment

- 08.2022-08.2025, IBS Center for Geometry and Physics
Mentor: Prof. Jihun Park
- 08.2018-07.2022, Korea Institute for Advanced Study, Research Fellow
Mentor: Prof. JongHae Keum
- 09.2017-07.2018, University of Bayreuth, Postdoc
Mentor: Prof. Fabrizio Catanese
- 01.2017-08.2017, Max Planck Institute for Mathematics, Guest Researcher

Education

- 2013-2017, PhD in Mathematics, University of Edinburgh,
Supervisor: Professor I. Cheltsov
- 2008-2013, Specialist in Mathematics, Moscow State University,
Supervisor: Professor Y. G. Prokhorov

Research interests

Birational Geometry, Birational Rigidity, Cremona group, Standard models of Mori fiber spaces, Semiorthogonal Decomposition.

Published and Accepted Papers.

- *H. Abban, I. Krylov, [Birational rigidity of orbifold degree 2 del Pezzo fibrations](#), arxiv.1710.05328, 2017.*
- *H. Abban, M. Fedorchuk, I. Krylov, [Stability of fibrations over one-dimensional bases](#), Accepted to *Duke Mathematical Journal*, 2019.*

- *I. Krylov, T. Okada* Stable rationality of del Pezzo fibrations of low degree over projective spaces, *International Mathematics Research Notices* no. 23,9075-9119, 2020.
- *I. Krylov*, Birational geometry of del Pezzo fibrations with terminal quotient singularities, *J. Lond. Math. Soc.* (2) 97, no. 2, 222-246, 2018.
- *I. Krylov*, Rationally connected non Fano type varieties, *Eur. J. Math.*, no. 1, 335-355, 2018.

Submitted Papers

- *I. Krylov, T. Okada, E. Paemurru, J. Park*, $2n^2$ -inequality for cA_1 points and applications to birational rigidity, arxiv.2205.12743, 2022.
- *I. Krylov*, Families of embeddings of the alternating group of rank 5 into the Cremona group, arxiv.2005.07354, 2020.

Grants

[Heilbronn Institute for Mathematical Research, Focused Research Grant, 4300 pounds, 2016](#)

I used this grant to bring Maksym Fedorchuk and Hamid Abban to Edinburgh to discuss possible collaboration on stability of fibrations over curves.

Talks in seminars and conferences

- Families of simple subgroups in the Cremona group arising from del Pezzo fibrations, IBS CGP, Pohang, July 2022
- Affine Algebraic Geometry, Saitama, March 2021
- Birational Geometry, Kahler-Einstein Metrics, and Degenerations, IBS CGP, Pohang, November 2019
- Birational Geometry, Kahler-Einstein Metrics, and Degenerations, ShanghaiTech University, Shanghai, June 2019
- Algebraic Geometry seminar in Brown University, Providence, May 2019
- Algebraic Geometry seminar in Harvard, Boston, May 2019
- Algebraic Geometry seminar in NYU, New-York, May 2019
- Algebraic Geometry seminar in Johns Hopkins University, Baltimore, April 2019
- Algebraic Geometry near-Boston Conference, MIT, Boston, April 2019
- Birational Geometry, Kahler-Einstein Metrics, and Degenerations, Higher School of Economics, Moscow, April 2019
- Derived Categories of Sextic Du Val del Pezzo surfaces III, KIAS, Seoul, March 2019
- Derived Categories of Sextic Du Val del Pezzo surfaces II, KIAS, Seoul, March 2019

- Derived Categories of Sextic Du Val del Pezzo surfaces I, KIAS, Seoul, February 2019
- Instanton Bundles on Quartic del Pezzo Threefold, KIAS, Seoul, January 2019
- Instanton Bundles on Fano Threefolds II, KIAS, Seoul, December 2018
- Instanton Bundles on Fano Threefolds I, KIAS, Seoul, December 2018
- Iskovskih seminar in Steklov Institute, Moscow, November 2018
- Introduction to Derived Categories IV, KIAS, Seoul, October 2018
- Workshop on Algebraic Geometry in Gunsan, Korea, October 2018
- Introduction to Derived Categories I, KIAS, Seoul, September 2018

Organization experience

- [Algebraic Geometry International Conference](#) (KIAS, 2019)
5 day conference, 17 speakers.
- Learning seminar on derived categories in KIAS (2018-2019).
- Algebra and geometry seminar for PhD students and postdocs in University of Edinburgh (2014-2016)

Teaching experience

I tutored for 6-7 hours a week in Edinburgh university as a PhD student. I was a tutor for the following courses in Edinburgh throughout 2013-2016

- Two semesters of Introduction to Linear algebra in the University of Edinburgh.
- Two semesters of Calculus and applications.
- Four semesters of support workshops for the two courses above.
- One semester of Introduction to Number Theory.
- Three semesters of Differential Geometry.
- Two semesters of Engineering mathematics.

I have also attended the following workshops on teaching.

- Workshop organized by Higher Education Academy for postgraduate students who teach mathematics, statistics, and operational research. (Edinburgh, 2015)
- Workshop "Assessment and Providing Feedback in the Sciences". (Edinburgh, 2015)
- Workshop "Tutoring in the Sciences". (Edinburgh, 2015)

Language Proficiency

Russian: native

English: fluent

Korean: intermediate

References

- Prof. Alessio Corti, Imperial College, a.corti@imperial.ac.uk
- Prof. JongHae Keum, Korea Institute for Advanced Study, jhkeum@kias.re.kr
- Prof. Ivan Cheltsov, University of Edinburgh, I.Cheltsov@ed.ac.uk
- Prof. Antony Maciocia, University of Edinburgh, A.Maciocia@ed.ac.uk
- Dr. Maksym Fedorchuk, Boston College, fedorchm@bc.edu
- Dr. Hamid Abban, Loughborough University, h.abban@lboro.ac.uk