

Alexey Balitskiy

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CITIZENSHIP

RUSSIA

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Sep 2016 – present | PhD
 Department: Mathematics
 Advisor: Larry Guth
 Thesis topic (tentative): Urysohn width

MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY

Sep 2014 – Jun 2016 | Master
 Sep 2010 – Jun 2014 | Bachelor
 Department: Control and Applied Mathematics
 Advisor: Roman Karasev
 Thesis: “Shortest closed billiard trajectories in convex bodies in connection with Viterbo’s conjecture”

LANGUAGES

Russian | mother-tongue
 English | fluent
 C++/C#/Unity | modest

HOBBIES

Singing in choir
 Playing piano four hands
 Gongfu tea
 Indie games
 Virtual & augmented reality
 Kintsugi
 Metamodern arts & crafts

RESEARCH

FIELDS OF INTEREST

Metric, convex, discrete, symplectic geometry

SELECTED PAPERS AND PREPRINTS

- *Waist of maps measured via Urysohn width* (with A. Berdnikov), preprint arXiv:2009.04558 (2020+)
- *Local-to-global Urysohn width estimates* (with A. Berdnikov), preprint arXiv:2008.07718 (2020+)
- *A multi-plank generalization of the Bang and Kadets inequalities*, to appear in Israel J. Math. (2020+)
- *Flip cycles in planar graphs* (with J. Wellman), Selecta Math. (N.S.) 26.1 (2020): 1-29
- *Equality cases in Viterbo’s conjecture and isoperimetric billiard inequalities*, Int. Math. Res. Not. 2020.7 (2020): 1957-1978
- *On the Circle Covering Theorem by A. W. Goodman and R. E. Goodman* (with A. Akopyan and M. Grigorev), Discrete Comput. Geom. 59.4 (2017): 1001-1009
- *Shortest closed billiard trajectories in the plane and equality cases in Mahler’s conjecture*, Geom. Dedicata 184.1 (2016): 121-134
- *Billiards in convex bodies with acute angles* (with A. Akopyan), Israel J. Math. 216.2 (2016): 833-845
- *Elementary approach to closed billiard trajectories in asymmetric normed spaces* (with A. Akopyan, R. Karasev and A. Sharipova), Proc. Amer. Math. Soc. 144.10 (2016): 4501-4513
- *Another Ham Sandwich in the Plane* (with A. Garber and R. Karasev), Ann. Comb. 19.2 (2015): 235-242

DISTINCTION

- Mar 2015 Laureate of Simons stipend for students in Moscow
 Nov 2014 2nd place in 18th All-Russian Möbius Contest
 Jul 2014 First Prize at International Mathematics Competition for University Students | Bulgaria
 Apr 2010 Winner at All-Russian Mathematical Olympiad

TEACHING & MENTORING

SPUR MENTOR | MASSACHUSETTS INSTITUTE OF TECHNOLOGY

- 2020 E. Bullock and K. Gravel | *Higher secondary polytopes for zonotopal tilings*
 2018 J. Wellman | *Flips in reduced planar graphs*

TEACHING ASSISTANT | MASSACHUSETTS INSTITUTE OF TECHNOLOGY

- 2017–present recitation teacher: Convex optimization
 grader: Probability | Linear Algebra | Functional analysis

TEACHING ASSISTANT | MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY

- 2014–2016 among other things: Topics in algebra (link in Russian) |
 Topics in geometric combinatorics (link in Russian)