

DISCRETE AND CONVEX GEOMETRY

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **PhD (Candidate of Science)**

Language of study: **English**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **375 000 RUB**

Programme curator: **Denis Ustyuzhaninov**

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Entry requirements:

- Master's degree / equivalent in a related field
- B2 level of English
- Good track record of publications related to the topic of the intended research
- Strong research proposal 1,500 - 3,500 words

Research supervisor:

[Alexandr Polyanskii](#)

PhD

Supervisor's research :

- Discrete and convex geometry.
- Extremal combinatorics. (See books of Matousek "Lecture on Discrete Geometry" and "33 miniatures on linear algebra").

Research highlights:

Possibility to collaborate with other (Russian and foreign) researchers of the Laboratory of Combinatorial and Geometric Structures

Supervisor's specific requirements:

- Good mathematical level (Linear Algebra, Discrete Mathematics, Functional Analysis).
- A possibility to do research at least 35 hours per week. (reading papers, tackling open mathematical problems, participating in discussions and etc.)

Main publications:

- Z. Jiang, A. Polyanskii, Proof of László Fejes Tóth's zone conjecture, Geometric and Functional Analysis, 27(6), (2017), 1367-1377.
- Z. Jiang, A. Polyanskii, Forbidden subgraphs for graphs of bounded spectral radius, with applications to equiangular lines, Israel Journal of Mathematics, (2020).
- A. Polyanskii, On almost-equidistant sets, Linear Algebra and its Applications, 563 (2019), 220-230.

Specializations within this programme