Ilya Losev

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Education

University of Cambridge   Since Oct. 2021
PhD in Mathematics of Information   *Supervisor:* James Norris

St. Petersburg University   Sept. 2019 – June 2021
Master in Mathematics; GPA: 5/5   *Supervisor:* Yurii Belov

University of Geneva, SwissMAP Master Class   Sept. 2019 – Aug. 2020
Master in Mathematical Physics; GPA: 5.9/6   *Supervisor:* Stanislav Smirnov

St. Petersburg University   Sept. 2015 – June 2019
Bachelor in Mathematics; GPA: 5/5   *Supervisor:* Yurii Belov

Job experience

Research Assistant   Nov. 2017 – Sept. 2021
Chebyshev Laboratory, St. Petersburg University

Organizer of St. Petersburg Math Olympiad   Sept. 2016 – May 2018
Mathematics Olympiad Committee, St. Petersburg

Teaching Assistant   Sept. 2015 – Aug. 2019
Physics and Mathematics Lyceum 239, St. Petersburg

Research interests

My research is mainly focused on problems related to probability theory, statistical physics and quantum field theories. I am studying probabilistic models that come from mathematical physics, and I am interested in questions related to the description of their large-scale or large-time (for stochastic processes) behaviour.

Research papers

- Large deviations of the Schwarzian Field Theory; *arXiv:2406.17069*, 2024;

- Probabilistic correlation functions of the Schwarzian Field Theory; *arXiv:2406.17071*, 2024;

- Probabilistic definition of the Schwarzian Field Theory; (with R. Bauerschmidt and P. Wildemann), *arXiv:2406.17068*, 2024;

- How long are the arms in DBM?; (with S. Smirnov), *arXiv:2307.14931*; *Communications in Mathematical Physics*, Volume 406, Issue 4, 2025;

- Jacobi matrices with lacunary spectrum, *arXiv:2009.07579*; *Journal of Mathematical Analysis and Applications*, Volume 503, Issue 1, 2021.

Awards

Edouard Gans Prize   2020
Best Master's Thesis in Mathematics, University of Geneva

International Mathematics Competition, Gold Medal   2017
University Level Competition

Research talks and posters

University of Sussex Mathematical Physics Seminar   Brighton, UK; Feb. 2025
Probabilistic Schwarzian Field Theory   *Seminar Talk*

IHES Probability and Analysis Seminar   Paris, France; Dec. 2024
Probabilistic Schwarzian Field Theory   *Seminar Talk*

Invited Mini Course   Geneva, Switzerland; Dec. 2024
Probabilistic Schwarzian Field Theory   *Mini course*

Oxford Stochastic Analysis Seminar   Oxford, UK; Nov. 2024
Probabilistic Schwarzian Field Theory   *Seminar Talk*

Sapienza Probability Seminar   Rome, Italy; March 2024
How long are the arms in DBM?   *Seminar Talk*

Cambridge Probability Seminar   Cambridge, UK; Oct. 2023
How long are the arms in DBM?   *Seminar Talk*

Phase Transitions and Correlated Random Processes   Cambridge, UK; May 2023
Schwarzian Field Theory   *Short Talk*

Probability and Mathematical Physics Conference   Helsinki, Finland; July 2022
How long are the arms in DBM?   *Poster*

7th SwissMAP General Meeting   Gstaad, Switzerland; Aug. 2020
How long are the arms in DBM?   *Poster*

SwissMAP Site Visit   Online; June 2020
How long are the arms in DBM?   *Poster*

Emergent Trends in Complex   Barcelona, Spain; Oct. 2019
Function Theory Workshop   *Short Talk*
Jacobi matrices with lacunary spectrum

Spectral Function Theory   St. Petersburg, Russia; April 2019
International Spring School   *Short Talk*
Jacobi matrices with lacunary spectrum

Other research visits

Oberwolfach Arbeitsgemeinschaft   Oberwolfach, Germany; Dec. 2023
QFT and Stochastic PDEs   *Reading Group*

SwissMAP Research Station   Les Diablerets, Switzerland; Aug. 2023
Short Research Stay   *Research Visit*

Teaching

Random Structures in Finite-dimensional Space   University of Cambridge; Spring 2025
Example classes for Part III (Master's) students   *Teaching Assistant*

Probability and Measure Preparatory Workshop   University of Cambridge; Fall 2024
Preparatory course for Part III (Master's) students

Stochastic Calculus   University of Cambridge; Spring 2024
Example classes for Part III (Master's) students   *Teaching Assistant*

Advanced Probability   University of Cambridge; Fall 2023
Example classes for Part III (Master's) students   *Teaching Assistant*

Mathematical Analysis   SPbU; Fall 2020
Example classes for 1st year undergraduate students   *Teaching Assistant*

Mathematical Analysis   SPbU; Fall 2016 – Spring 2019
Grading solutions of undergraduate students   *Grading Assistant*

Advanced Mathematics   Lyceum 239; Fall 2015 – Summer 2019
Advanced course for high and middle school students   *Teaching Assistant*