

Leonid Petrov. Abbreviated CV

Associate Professor of Mathematics. At University of Virginia since 2014

<https://lpetrov.cc>

petrov@virginia.edu

Research areas: Integrable Probability, Mathematical Physics, Algebraic Combinatorics, Representation Theory.

Ph.D., Institute for Information Transmission Problems (2010).

Current funding

[2022–2025] NSF DMS grant 2153869 “Random Systems from Symmetric Functions and Vertex Models”, \$320,654

[2022–2024] 4-VA at UVA Collaborative Research Grant program “Randomness by algebraic structures”, \$30,000

[2020–2025] Simons Collaboration Grant for Mathematicians 709055 “Distributional symmetries in stochastic systems”, \$42,000.

Selected publications. Full list [here](#)

- [38] Amol Aggarwal, Alexei Borodin, Leonid Petrov, Michael Wheeler. *Free Fermion Six Vertex Model: Symmetric Functions and Random Domino Tilings*, **Selecta Mathematica**, 29, article 36 (2023).
- [32] Leonid Petrov, Axel Saenz. *Mapping TASEP back in time*, **Probability Theory and Related Fields**, 182, 481–530 (2022).
- [27] Alexey Bufetov, Leonid Petrov. *Yang-Baxter field for spin Hall-Littlewood symmetric functions*, **Forum of Mathematics Sigma** 7 (2019), e39.
- [22] Vadim Gorin, Leonid Petrov. *Universality of local statistics for noncolliding random walks*, **Annals of Probability** (2019), Vol. 47, No. 5, 2686–2753.
- [20] Alexei Borodin, Leonid Petrov. *Higher spin six vertex model and symmetric rational functions*, **Selecta Mathematica** 24 (2018), no. 2, 751–874.
- [18] Ivan Corwin, Leonid Petrov. *Stochastic higher spin vertex models on the line*, **Communications in Mathematical Physics** 343 (2016), no. 2, 651–700.
- [15] Alexei Borodin, Leonid Petrov. *Integrable probability: From representation theory to Macdonald processes*, **Probability Surveys**, 11 (2014), 1–58. Awarded the 2020 Bernoulli Prize for an outstanding survey article in probability
- [9] Leonid Petrov. *Asymptotics of Random Lozenge Tilings via Gelfand-Tsetlin Schemes*, **Probability Theory and Related Fields**, 160 (2014), no. 3, 429–487.

- [other] Sihan Li, Andrew Mecca, Jeewoo Kim, Giusy Caprara, Elizabeth Wagner, Ting-Ting Du, Leonid Petrov, Wenhao Xu, Runjia Cui, Ivan Rebustini, Bechara Kachar, Anthony Peng, and Jung-Bum Shin, *Myosin-VIIa is expressed in multiple isoforms and essential for tensioning the hair cell mechanotransduction complex*. **Nature Communications**, 11, Article number: 2066 (2020).

Recent organization and service

- 2025: Section at the [Mathematical Congress of the Americas 2025](#), University of Miami, Miami, FL, July 21-25, 2025.
- 2024: [Virginia Integrable Probability Summer School 2024](#), July 8-19, 2024.
- 2024: [Workshop "Randomness and Lie-Theoretic Structures at University of Virginia"](#), March 4-5, 2024.
- 2024: [Special session "Solvable Lattice Models and their Applications" at the Joint Mathematics Meetings 2024](#), San Francisco, CA, January 3-6, 2024.
- 2023: [SouthEastern Probability Conference - II at University of Virginia](#), August 14-15, Charlottesville, VA, 2023.
- 2020: [Online conference on Statistical Mechanics, Integrable Systems and Probability](#), April 27 - May 1, 2020.
- 2019: [Virginia Integrable Probability Summer School 2019](#), May 17 - June 8, 2019.

Teaching at University of Virginia (since 2014)

Complex Variables; Introduction to Probability; Introduction to Stochastic Processes; Calculus III; Asymptotic representation theory (graduate topics course); Particle Systems (graduate topics course); Random matrices (graduate topics course); Real Analysis and Linear Spaces (graduate).

Editing and reviewing

- Member of the editorial boards at "[Mathematical Physics, Analysis and Geometry](#)", "[Combinatorial Theory](#)", and "[Electronic Journal/Communications of Probability](#)".
- Program committee member for FPSAC (Formal Power Series and Algebraic Combinatorics), 2017, 2021, and 2024.
- I regularly referee scholarly journal papers submitted to numerous journals, including Ann. Prob., Adv. Math., Adv. Appl. Math., Comm. Math. Phys., Intern. J. Math., Arkiv för Mat., SIGMA, J. Alg. Comb., Comm. Pure Appl. Math., Intern. Math. Res. Notices, J. Appl. Probab., J. Comb. Theory A, Symp. Th. Aspects of Comp. Sci., J. of Stat. Physics, Electron. Comm. Probab.