Leonid Petrov. Publication List

Preprints (∗), accepted, or published works

[38] (∗) (with Amol Aggarwal, Alexei Borodin, and Michael Wheeler) *Free Fermion Six Vertex Model: Symmetric Functions and Random Domino Tilings*, arXiv:2109.06718 [math.PR].

[37] *Refined Cauchy identity for spin Hall-Littlewood symmetric rational functions*, arXiv:2007.10886 [math.CO]. **Journal of Combinatorial Theory Ser. A**, vol. 184 (2021), 105519 PDF link

[36] (∗) (with Matteo Mucciconi) *Spin q-Whittaker polynomials and deformed quantum Toda*, arXiv:2003.14260 [math.PR]. Submitted. PDF link

[35] (with Mikhail Tikhonov) *Parameter symmetry in perturbed GUE corners process and reflected drifted Brownian motions*, arXiv:1912.08671 [math.PR]. **Journal of Statistical Physics**, 181 (2020), 1996–2010. PDF link

[34] *Parameter permutation symmetry in particle systems and random polymers*, arXiv:1912.06067 [math.PR]. **SIGMA**, 17 (2021), 021, 34 pages. PDF link

[33] *PushTASEP in inhomogeneous space*, arXiv:1910.08994 [math.PR]. **Electron. J. Probab.**, vol. 25 (2020), paper no. 114. PDF link

[32] (with Axel Saenz) *Mapping TASEP back in time*, arXiv:1907.09155 [math.PR]. **Probability Theory and Related Fields**, online first (2021), https://doi.org/10.1007/s00440-021-01074-0. PDF link

[31] (with Alexey Bufetov and Matteo Mucciconi) *Yang-Baxter random fields and stochastic vertex models*, arXiv:1905.06815 [math.PR]. **Adv. Math.** 388 (2021), 107865. PDF link

[30] (with Ivan Corwin and Konstantin Matveev) *The q-Hahn PushTASEP*, arXiv:1811.06475 [math.PR]. **Intern. Math. Research Notices** (2019), rnz106. PDF link

[29] (with Alisa Knizel and Axel Saenz) *Generalizations of TASEP in discrete and continuous inhomogeneous space*, **Commun. Math. Phys.** Commun. Math. Phys. 372 (2019), no. 3, pp 797–864. https://link.springer.com/article/10.1007%2Fs00220-019-03495-4. arXiv:1808.09855 [math.PR]. PDF link

[28] (with Christian Gromoll, Mark Meckes) *Quenched Central Limit Theorem in a Corner Growth Setting*, **Electron. Comm. Probab.** 23 (2018) paper no. 101, 12pp, arXiv:1804.04222 [math.PR]. PDF link

[27] (with Alexey Bufetov) *Yang-Baxter field for spin Hall-Littlewood symmetric functions*, arXiv:1712.04584 [math.PR]. **Forum of Mathematics Sigma**, 7 (2019), e39. PDF link

[26] (with Michael Damron and David Sivakoff) *Coarsening model on $\mathbb{Z}^d$ with biased zero-energy flips and an exponential large deviation bound for ASEP*, **Comm. Math. Phys.** 362 (2018) no. 1, 185–217, arXiv:1708.05806 [math.PR]. PDF link

[25] (with Sevak Mkrtchyan) *GUE corners limit of q-distributed lozenge tilings*, **Electron. J. Probab.** 22 (2017), paper no. 101, 24 pp, arXiv:1703.07503 [math.PR]. PDF link

[24] (with Alexei Borodin) *Inhomogeneous exponential jump model*, **Probab. Th. Rel. Fields.** 172 (2018), 323-385, arXiv:1703.03857 [math.PR]. PDF link

[23] (with Daniel Orr) *Stochastic higher spin six vertex model and q-TASEPs*, **Adv. Math.** 317 (2017), 473-525, arXiv:1610.10080 [math.PR]. PDF link

[22] (with Vadim Gorin) *Universality of local statistics for noncolliding random walks*, **Ann. Probab.** (2019), Vol. 47, No. 5, 2686-2753, arXiv:1608.03243 [math.PR]. PDF link

[21] (with Alexei Borodin) *Lectures on Integrable probability: Stochastic vertex models and symmetric functions* (2016), arXiv:1605.01349 [math.PR]. **Lecture Notes of the Les Houches Summer School**, Volume 104, July 2015. PDF link

[20] (with Alexei Borodin) *Higher spin six vertex model and symmetric rational functions* (2016), **Selecta Math.** 24 (2018), no. 2, 751–874, arXiv:1601.05770 [math.PR]. PDF link

[19] (with Konstantin Matveev) *q-randomized Robinson–Schensted–Knuth correspondences and random polymers* (2015), **Annales de l'Institut Henri Poincaré D: Combinatorics, Physics and their Interactions** 4 (2017), no. 1, 1-123, arXiv:1504.00666 [math.PR]. PDF link

[18] (with Ivan Corwin) *Stochastic higher spin vertex models on the line*, **Comm. Math. Phys.** 343 (2016), no. 2, 651–700, DOI: 10.1007/s00220-015-2479-5, arXiv:1502.07374 [math.PR]. PDF link

[17] (with Alexei Borodin, Ivan Corwin, and Tomohiro Sasamoto) *Spectral theory for interacting particle systems solvable by coordinate Bethe ansatz*, **Comm. Math. Phys.** 339 (2015), no. 3, 1167–1245, DOI: 10.1007/s00220-015-2424-7, arXiv:1407.8534 [math-ph]. PDF link

[16] (with Alexey Bufetov) *Law of Large Numbers for Infinite Random Matrices over a Finite Field*, **Selecta Math.** 21 (2015), no. 4, 1271–1338, arXiv:1402.1772 [math.PR]. PDF link

[15] (with Alexei Borodin) *Integrable probability: From representation theory to Macdonald processes*, **Probability Surveys** 11 (2014), 1–58, arXiv:1310.8007 [math.PR]. PDF link

[14] (with Alexei Borodin, Ivan Corwin, and Tomohiro Sasamoto) *Spectral theory for the q-Boson particle system*, **Compositio Mathematica** 151 (2015), no. 1, 1–67, arXiv:1308.3475 [math-ph]. PDF link

[13] (with Ivan Corwin) *The q-PushASEP: A New Integrable Model for Traffic in 1+1 Dimension*, **Jour. Stat. Phys.** 160 (2015), no. 4, 1005–1026, arXiv:1308.3124 [math.PR]. PDF link

[12] (with Alexei Borodin) *Nearest neighbor Markov dynamics on Macdonald processes*, **Adv. Math.** 300 (2016), 71–155. Special volume honoring Andrei Zelevinsky. arXiv:1305.5501 [math.PR]. PDF link

[11] *The Boundary of the Gelfand-Tsetlin Graph: New Proof of Borodin-Olshanski's Formula, and its q-analogue*, **Moscow Math. J.** 14 (2014) no. 1, 121–160, arXiv:1208.3443 [math.CO]. PDF link

[10] *Asymptotics of Uniformly Random Lozenge Tilings of Polygons. Gaussian Free Field*, **Ann. Probab.** 43 (2014), no. 1, 1–43, arXiv:1206.5123 [math.PR]. PDF link

[9] *Asymptotics of Random Lozenge Tilings via Gelfand-Tsetlin Schemes*, **Probab. Th. Rel. Fields.** 160 (2014), no. 3, 429–487, arXiv:1202.3901 [math.PR]. PDF link

[8] $\mathfrak{sl}(2)$ *Operators and Markov Processes on Branching Graphs*, **Jour. Alg. Combinatorics** 38 (2013), no. 3, 663–720, arXiv:1111.3399 [math.CO]. PDF link

[7] *On Measures on Partitions Arising in Harmonic Analysis for Linear and Projective Characters of the Infinite Symmetric Group* (2011), **Proceedings of the international conference "50 years of IITP"**, arXiv:1107.0676 [math.CO]. PDF link

[6] *Pfaffian Stochastic Dynamics of Strict Partitions*, **Electron. J. Probab.** 16 (2011), 2246–2295, arXiv:1011.3329 [math.PR]. PDF link

[5] *Random Strict Partitions and Determinantal Point Processes*, **Electron. Comm. Probab.** 15 (2010), 162–175, arXiv:1002.2714 [math.PR]. PDF link

[4] *Random Walks on Strict Partitions*, **Jour. Math. Sci.** 168 (2010), no. 3, 437–463, arXiv:0904.1823 [math.PR]. PDF link

[3] *Limit Behavior of Certain Random Walks on Strict Partitions*, **Russian Math. Surveys** 64 (2009), no. 6, 1139–1141. PDF link

[2] *A Two-parameter Family of Infinite-dimensional Diffusions in the Kingman Simplex*, **Functional Analysis and Its Applications** 43 (2009), no. 4, 279–296, arXiv:0708.1930 [math.PR]. PDF link

[1] *Asymptotic Behavior of a Certain Collection of Particles on a Line Under Synchronization*, **Proceedings of the XXVIII Conference of Young Scientists of Department of Mechanics and Mathematics of the Lomonosov Moscow State University** (2006), 152–156, in Russian. PDF link

Other works

[1] 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). https://www.nature.com/articles/s41467-020-15936-z.