

# Leonid Petrov. Publication List

## Works in progress

1. *PushTASEP in inhomogeneous space*
2. (with Alexei Borodin, Ivan Corwin, and Vadim Gorin) *Integrable Probability (book)*
3. (with Igor Pak and Damir Yeliussizov) *Robinson-Schensted-Knuth and squared Littlewood-Richardson*
4. (with Alexey Bufetov and Matteo Mucciconi) *Yang-Baxter fields for spin  $q$ -Whittaker polynomials*

## Preprints (\*), accepted, or published works

- [29] (\*) (with Alisa Knizel and Axel Saenz-Rodriguez) *Generalizations of TASEP in discrete and continuous inhomogeneous space*, arXiv:1808.09855 [math.PR]. Submitted. [PDF link](#)
- [28] (\*) (with Christian Gromoll, Mark Meckes) *Quenched Central Limit Theorem in a Corner Growth Setting*, arXiv:1804.04222 [math.PR]. Submitted. [PDF link](#)
- [27] (\*) (with Alexey Bufetov) *Yang-Baxter field for spin Hall-Littlewood symmetric functions*, arXiv:1712.04584 [math.PR]. Submitted. [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*, arXiv:1708.05806 [math.PR]. To appear in Comm. Math. Phys. [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*, arXiv:1703.03857 [math.PR]. To appear in Probab. Th. Rel. Fields. [PDF link](#)
- [23] (with Daniel Orr) *Stochastic higher spin six vertex model and  $q$ -TASEPs*, Advances in Mathematics 317 (2017), 473-525, arXiv:1610.10080 [math.PR]. [PDF link](#)
- [22] (\*) (with Vadim Gorin) *Universality of local statistics for noncolliding random walks (2016)*, arXiv:1608.03243 [math.PR]. Submitted. [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*, *Journal of Statistical Physics*, 160 (2015), no. 4, 1005–1026, arXiv:1308.3124 [math.PR]. [PDF link](#)
- [12] (with Alexei Borodin) *Nearest neighbor Markov dynamics on Macdonald processes*, *Advances in Mathematics*, 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 Mathematical Journal* 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*, *Annals of Probability* 43 (2014), no. 1, 1–43, arXiv:1206.5123 [math.PR]. [PDF link](#)
- [9] *Asymptotics of Random Lozenge Tilings via Gelfand-Tsetlin Schemes*, *Probability Theory and Related 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*, *Journal of Algebraic 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*, Electronic Journal of Probability 16 (2011), 2246–2295, arXiv:1011.3329 [math.PR]. [PDF link](#)
- [5] *Random Strict Partitions and Determinantal Point Processes*, Electronic Communications in Probability 15 (2010), 162–175, arXiv:1002.2714 [math.PR]. [PDF link](#)
- [4] *Random Walks on Strict Partitions*, Journal of Mathematical Sciences 168 (2010), no. 3, 437–463, arXiv:0904.1823 [math.PR]. [PDF link](#)
- [3] *Limit Behavior of Certain Random Walks on Strict Partitions*, Russian Mathematical 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](#)