

## PUBLICATIONS LIST

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### In print or to appear

1. G. Ben Arous, I. Corwin. Current fluctuations for TASEP: A proof of the Prähofer-Spohn conjecture. *Ann. Probab.*, **39**:104–138 (2011).
2. I. Corwin, P.L. Ferrari, S. Péché. Limit processes for TASEP with shocks and rarefaction fans. *J. Stat. Phys.* **140**:232–267 (2010).
3. I. Corwin, P.L. Ferrari, S. Péché. Universality of slow decorrelation in KPZ growth. *Ann. Inst. H. Poincaré B*, **48**:134–150 (2012).
4. G. Amir, I. Corwin, J. Quastel. Probability distribution of the free energy of the continuum directed random polymer in  $1 + 1$  dimensions. *Commun. Pure Appl. Math.*, **64**:466–537 (2011).
5. I. Corwin, J. Quastel. Crossover distributions at the edge of the rarefaction fan. *Ann. Probab.*, **41**:1243–1314 (2013).
6. I. Corwin, J. Quastel, D. Remenik. Continuum statistics of the Airy<sub>2</sub> process. *Commun. Math. Phys.*, **317**:347–362 (2013).
7. A. Borodin, I. Corwin. Macdonald Processes. *Probab. Theo. Rel. Fields*, **158**:225–400 (2014).
8. I. Corwin, A. Hammond. Brownian Gibbs property for Airy line ensembles. *Inventiones Mathematicae*, **195**:441–508 (2014).
9. A. Borodin, I. Corwin, D. Remenik. Log-Gamma polymer free energy fluctuations via a Fredholm determinant identity. *Commun. Math. Phys.*, **324**:215–232 (2013).
10. I. Corwin, N. O’Connell, T. Seppäläinen, N. Zygouras. Tropical combinatorics and Whittaker functions. *Duke Math J.*, **163**:513–563 (2014).
11. A. Borodin, I. Corwin and T. Sasamoto. From duality to determinants for  $q$ -TASEP and ASEP. *Ann. Probab.*, **42**:2314–2382 (2014).
12. A. Borodin, I. Corwin, P. L. Ferrari. Free energy fluctuations for directed polymers in random media in  $1+1$  dimension. *Commun. Pure Appl. Math.*, **67**:1129–1214 (2014).
13. A. Borodin, I. Corwin. On moments of the parabolic Anderson model. *Ann. Appl. Probab.*, **24**:1171–1197 (2014).
14. A. Borodin, I. Corwin, D. Remenik. Multiplicative functionals on ensembles of non-intersecting paths. *Ann. Inst. H. Poincaré B*, **51**:28–58 (2015).
15. A. Borodin, I. Corwin. Discrete time  $q$ -TASEPs. *Int. Math. Res. Not.*, rnt206 (2013).
16. A. Borodin, I. Corwin, V. Gorin, Sh. Shakirov. Observables of Macdonald processes. *Trans. Amer. Math. Soc.*, **368**:1517–1558 (2016).
17. A. Borodin, I. Corwin, L. Petrov, T. Sasamoto. Spectral theory for the  $q$ -Boson particle system. *Compositio Mathematica*, **151**:1–67 (2015).
18. I. Corwin. The  $q$ -Hahn Boson process and  $q$ -Hahn TASEP. *Int. Math. Res. Not.*, rnu094 (2014).
19. I. Corwin, X. Sun. Ergodicity of the Airy line ensemble. *Elect. Commun. Probab.*, **19**:1–11 (2014).
20. I. Corwin, L. Petrov. The  $q$ -pushASEP: A new integrable particle system in  $1 + 1$  dimension. *J. Stat. Phys.*, **160**:1005–1026 (2015).

21. I. Corwin, J. Quastel, D. Remenik. The renormalization fixed point of the Kardar-Parisi-Zhang universality class. *J. Stat. Phys.*, **160**:815–834 (2015).
22. I. Corwin, T. Seppäläinen, H. Shen. The strict-weak lattice polymer. *J. Stat. Phys.*, **160**:027–1053 (2015).
23. A. Borodin, I. Corwin, L. Petrov, T. Sasamoto. Spectral theory for interacting particle systems solvable by coordinate Bethe ansatz. *Commun. Math. Phys.*, **339**:1167–1245 (2015).
24. A. Borodin, I. Corwin, P. L. Ferrari, B. Vető. Height fluctuations for the stationary KPZ equation. *Math. Phys. Anal. Geo.*, DOI 10.1007/s11040-015-9189-2 (2015).
25. A. Borodin, I. Corwin, D. Remenik. A classical limit of Noumi’s  $q$ -integral operator *SIGMA*, 098 (2015).
26. I. Corwin, Z. Liu, D. Wang. Fluctuations of TASEP and LPP with general initial data. *Ann. Appl. Probab.*, **26**:2030–2082 (2016).
27. I. Corwin, L. Petrov. Stochastic higher spin vertex models on the line. *Commun. Math. Phys.*, **343**:651–700 (2016).
28. A. Borodin, I. Corwin, V. Gorin. Stochastic six-vertex model. *Duke Math. J.*, **165**:563–624 (2016).
29. I. Corwin, A. Hammond. KPZ line ensemble. *Probab. Theo. Rel. Fields*, **166**:67–185 (2016).
30. G. Barraquand, I. Corwin. The  $q$ -Hahn asymmetric exclusion process. *Ann. Appl. Probab.*, **26**:2304–2356 (2016).
31. A. Bufetov, A. Borodin, I. Corwin. Directed random polymers via nested contour integrals. *Ann. Phys.*, **368**:191–247 (2016).
32. I. Corwin, F. L. Toninelli. Periodized two-dimensional  $q$ -Whittaker dynamics with explicit stationary measure. *Elect. Commun. Probab.*, **21**:44 (2016).
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34. I. Corwin, Y. Gu. Kardar-Parisi-Zhang equation and large deviations for random walks in weak random environments. *J. Stat. Phys.*, **166**:150–168 (2017).
35. I. Corwin, M. Nica. Intermediate disorder directed polymers and the multi-layer extension of the stochastic heat equation. *Elect. J. Probab.*, **22** (2017).
36. G. Barraquand, I. Corwin. Random-walk in Beta-distributed random environment. *Probab. Theory Relat. Fields*, **167**:1057–1116 (2017).
37. I. Corwin, L.-C. Tsai. KPZ equation limit of higher-spin exclusion processes. *Ann. Probab.*, **45**:1771–1798 (2017).
38. I. Corwin, H. Shen, L-C. Tsai. ASEP( $q, j$ ) converges to the KPZ equation. *Ann. Inst. H. Poincare*, to appear.
39. I. Corwin, H. Shen. Open ASEP in the weakly asymmetric regime. *Commun. Pure Appl. Math.*, to appear.
40. J. Baik, G. Barraquand, I. Corwin, T. Suidan. Pfaffian Schur processes and last passage percolation in a half-quadrant. *Ann. Probab.*, to appear.
41. A. Borodin, I. Corwin, P. L. Ferrari. Anisotropic  $(2 + 1)$ D growth and Gaussian limits of  $q$ -Whittaker processes. *Probab. Theor. Rel. Fields*, to appear.
42. A. Borodin, I. Corwin. Dynamic ASEP, duality and continuous  $q^{-1}$ -Hermite polynomials. *Int. Math. Res. Not.*, to appear.

### Submitted

43. J. Baik, G. Barraquand, I. Corwin, T. Suidan. Facilitated exclusion process.

44. I. Corwin, E. Dimitrov. Transversal fluctuations of the ASEP, stochastic six vertex model, and Hall-Littlewood Gibbsian line ensembles.
45. G. Barraquand, A. Borodin, I. Corwin, M. Wheeler. Stochastic six-vertex model in a half-quadrant and half-line open ASEP.

#### **Review articles, proceedings or published lecture notes**

46. I. Corwin. Exactly solving the KPZ equation. In *Random Growth Models Proceedings of Symposia in Applied Mathematics, AMS*, March 2016.
47. I. Corwin. Kardar-Parisi-Zhang universality. *Notices of the American Mathematical Society*, March 2016.
48. I. Corwin. Macdonald processes, quantum integrable systems and the Kardar-Parisi-Zhang universality class. *Proceedings of the International Congress of Mathematicians 2014*.
49. I. Corwin. Two ways to solve ASEP. *Pan-American Summer Institute: Topics in Percolative and Disordered Systems*, Springer. Editors: Gérard Ben Arous, Chuck Newman, Alejandro Ramirez, Vladas Sidoravicius, and Maria Eulalia Vares.
50. I. Corwin. Macdonald processes. *Proceedings of the XVIIth Congress on Mathematical Physics*, World Scientific.
51. I. Corwin. The Kardar-Parisi-Zhang equation and universality class. *Random Matrices: Theory and Applications*, **1** (2012).
52. I. Corwin, M. Hilario, and A. Kassel. Probability and statistical physics in two and more dimensions (*Clay Mathematics Institute 2010 Summer School Report*; David Ellwood, Charles Newman, Vladas Sidoravicius and Wendelin Werner Organizers).

#### **Ph.D. Thesis**

53. I. Corwin. The Kardar-Parisi-Zhang equation and universality class. Courant Institute (NYU) Ph.D. thesis (2011). Advisor: Gérard Ben Arous; Committee: Sourav Chatterjee, Percy Deift, Charles Newman, S.R.S. Varadhan.

#### **Undergraduate Thesis**

54. I. Corwin. Automorphic distributions from cocompact Fuchsian groups. Harvard honors thesis (2006). Advisor: Professor W. Schmid.

#### **Earlier publications**

55. I. Corwin, F. Morgan. The Gauss-Bonnet formula on surfaces with densities. *Involve*. **4** (2011).
56. A. Othman, I. Corwin. Time inconsistency and uncertainty aversion in prediction markets. *Third Workshop on Prediction Markets, in conjunction with the ACM Conference on Electronic Commerce (EC)* (2008).
57. J. Corneli, I. Corwin, S. Hurder, V. Sesum, Y. Xu, E. Adams, D. Davis, M. Lee, R. Visocchi. Double bubbles in Gauss space and spheres. *Houston J. of Math.* **31** (2008).
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60. I. Corwin, S. Ganatra, N. Rozenblyum. A single-car interaction based model of traffic for a highway toll-plaza. *UMAP Journal* **26** (2005).
61. I. Corwin, S. Ganatra, N. Rozenblyum. A myopic aggregate-decision model for reservation systems in amusement parks. *UMAP Journal* **25** (2004).
62. I. Corwin, S. Ganatra, N. Rozenblyum. A time-independent model of box safety for stunt motorcyclists. *UMAP Journal* **24** (2003).