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 Airy2 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 Whitakker 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. Analy. Geo.*, DOI 10.1007s11040-015-9189-2 (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).

33. A. Borodin, I. Corwin, F. L. Toninelli. Stochastic heat equation limit of a $(2+1)$D growth model. *Commun. Math Phys.*, **350**:957–984 (2017).

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*, **54**:995–1012 (2018).

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.*, rnx299 (2018).

43. I. Corwin, E. Dimitrov. Transversal fluctuations of the ASEP, stochastic six vertex model, and Hall-Littlewood Gibbsian line ensembles. *Commun. Math Phys.*, to appear.

44. J. Baik, G. Barraquand, I. Corwin, T. Suidan. Facilitated exclusion process. Proceedings of the 2016 Abel Symposium.

45. G. Barraquand, A. Borodin, I. Corwin, M. Wheeler. Stochastic six-vertex model in a half-quadrant and half-line open ASEP. *Duke Math. J.*, to appear.

Submitted

46. G. Barraquand, A. Borodin, I. Corwin. Half-space Macdonald processes.
47. I. Corwin, P. Ghosal Lower tail of the KPZ equation.
48. I. Corwin, P. Ghosal, A. Krajenbrink, P. Le Doussal Coulomb-gas electrostatics controls large fluctuations of the KPZ equation.
49. I. Corwin, P. Ghosal, H. Shen, L. C. Tsai. Stochastic PDE limit of the six vertex model.

Books, proceedings and review articles

50. I. Corwin (Editor). PCMI 2017 Proceedings.
51. I. Corwin. Exactly solving the KPZ equation. In Random Growth Models *Proceedings of Symposia in Applied Mathematics, AMS*, March 2016.
52. I. Corwin. Kardar-Parisi-Zhang universality. *Notices of the American Mathematical Society*, March 2016.
53. I. Corwin. Macdonald processes, quantum integrable systems and the Kardar-Parisi-Zhang universality class. *Proceedings of the International Congress of Mathematicians 2014*.
54. 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.
55. I. Corwin. Macdonald processes. *Proceedings of the XVIIth Congress on Mathematical Physics*, World Scientific.
56. I. Corwin. The Kardar-Parisi-Zhang equation and universality class. *Random Matrices: Theory and Applications*, **1** (2012).
57. 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

58. 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 publications

59. I. Corwin, F. Morgan. The Gauss-Bonnet formula on surfaces with densities. *Involve.* **4** (2011).
60. 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).
61. 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).
62. E. Adams, I. Corwin, D. Davis, M. Lee, R. Visocchi. Isoperimetric regions in Gauss sectors. *Rose Hulman Undergrad. J. Math.* **8** (2007).

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

64. I. Corwin, S. Hurder, V. Sesum, Y. Xu. Differential geometry of manifolds with density. *Rose Hulman Undergrad. J. Math.* **7** (2006).

65. I. Corwin, S. Ganatra, N. Rozenblyum. A single-car interaction based model of traffic for a highway toll-plaza. *UMAP Journal* **26** (2005).

66. I. Corwin, S. Ganatra, N. Rozenblyum. A myopic aggregate-decision model for reservation systems in amusement parks. *UMAP Journal* **25** (2004).

67. I. Corwin, S. Ganatra, N. Rozenblyum. A time-independent model of box safety for stunt motorcyclists. *UMAP Journal* **24** (2003).