

PREPRINTS and PUBLISHED ARTICLES

All preprints are downloadable from the Math ArXiv.

1. On the difference between entropic cost and the optimal transport cost. Preprint available at arxiv.org/abs/1905.12206. 2019.
2. Community detection in the sparse hypergraph stochastic block model. With Y. ZHU. Preprint available at arxiv.org/abs/1904.05981. 2019.
3. Aldous diffusion I: a projective system of continuum k -tree evolutions. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. Preprint available at arxiv.org/abs/1809.07756. 2018.
4. Interval partition evolutions with emigration related to the Aldous diffusion. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. Preprint available at arxiv.org/abs/1804.01205. 2018.
5. Shuffling cards by spatial motion. With PERSI DIACONIS. Preprint available at arxiv.org/abs/1708.08147. 2017.

6. Multiplicative Schrödinger problem and the Dirichlet transport. With T.-K. L. WONG. *PTRF* **178** (1), 613–654. 2020.
7. Can coherent predictions be contradictory? With K. BURDZY. To appear in *Advances in Applied Probability*. Preprint available at arxiv.org/abs/1912.00126. 2020.
8. Diffusions on a space of interval partitions: Poisson-Dirichlet stationary distributions. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. To appear in *Annals of Probability*. Preprint available at arxiv.org/abs/1609.06706v1.
9. Metrics on sets of interval partitions with diversity. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. *ECP* **25** (38) 1–16.
10. Diffusions on a space of interval partitions: construction from marked Lévy processes. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. To appear in *EJP*.
11. Floodings of metric graphs. With K. BURDZY. *PTRF*, **177** (1), 577–620. 2020.
12. Projections of the Aldous chain on binary trees: intertwining and consistency. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. To appear in *Random Structures and Algorithms*. Preprint available at arxiv.org/abs/1802.00862. 2018.
13. A note on transportation cost inequalities for diffusions with reflections. With A. SARANTSEV. *ECP*, **24** (21), 1–11, 2019.
14. The random transposition dynamics on random regular graphs and the Gaussian free field. With S. GANGULY. To appear in *Annales de l'Institut Henri Poincaré (B)*. Preprint available at [http://arxiv.org/abs/1409.7766](https://arxiv.org/abs/1409.7766).
15. Exponentially concave functions and high-dimensional stochastic portfolio theory. *Stochastic Processes and their Applications* **129** (9), 3116–3128, 2019.
16. Twin peaks. With K. BURDZY. *Random Structures & Algorithms* **56** (2), 432–460, 2020.

17. Exponentially concave functions and a new information geometry. With T.-K. L. WONG. *The Annals of Probability*, **46** (2), 1070–1113, 2018.
18. Uniform control of local times of spectrally positive stable processes. With N. FORMAN, D. RIZZOLO, AND M. WINKEL. *The Annals of Applied Probability*, **28** (4), 2592–2634, 2018.
19. Embedding optimal transports in statistical manifolds. *Indian Journal of Pure and Applied Mathematics*, **48** (4), 541–550, 2017.
Available at <http://arxiv.org/abs/1708.08148>.
20. Surfactant-free shape control of gold nanoparticles enabled by unified theoretical framework of nanocrystal synthesis. With M. A. WALL ET AL.. *Advanced Materials*, **29** (21) 2017. (Note: Mathematical collaboration with a group of chemists.)
21. Systems of Brownian particles with asymmetric collisions. With I. KARATZAS and M. SHKOLNIKOV. *Annales de l'Institut Henri Poincaré (B)* **52** (1), 323–354, 2016.
22. On meteors, earthworms, and wimps. With S. BILLEY, K. BURDZY, and B. SAGAN. To appear in *The Annals of Applied Probability* **25** (4) 1729–1779, 2015.
23. The geometry of relative arbitrage. With T.-K. L. WONG. *Mathematics and Financial Economics* **10** (3), 263–293, 2015.
24. Concentration of measure for systems of Brownian particles interacting through their ranks. With M. SHKOLNIKOV. *The Annals of Applied Probability* **24** (4), 1482–1508, 2014.
25. Cycles and eigenvalues of sequentially growing random regular graphs. With T. JOHNSON. *The Annals of Probability* **42** (4), 1396–1437, 2014.
26. Brownian earthworm. With K. BURDZY and Z-Q. CHEN. *The Annals of Probability* **41** (6), 3697–4427, 2013.
27. Functional limit theorems for random regular graphs. With I. DUMITRIU, T. JOHNSON, and E. PAQUETTE. *PTRF* **156**, 921–975, 2013.
28. Wright-Fisher model with negative mutation rates. *The Annals of Probability* **41** (2), 503–526, 2013.
29. Intertwining diffusions and wave equations. With M. SHKOLNIKOV. Unpublished research note. Available at <http://arxiv.org/abs/1306.0857>.
30. Sparse regular random graphs: spectral density and eigenvectors. With I. DUMITRIU. *The Annals of Probability* **40** (5), 2197–2235, 2012.
31. Concentration for multidimensional diffusions and their boundary local times. *Probability Theory and Related Fields* **154** (1), 225–254, 2012.
32. Convergence rates for rank-based models with applications to portfolio theory. With T. ICHIBA and M. SHKOLNIKOV. *PTRF* **156**, 415–448, 2012.
33. Extinction of Fleming-Viot-type particle systems with strong drift. With K. BURDZY and M. BIENIEK. *ECP* **17** (11), 2012.
34. Brownian approximation to counting graphs. *SIAM J Discrete Math* **26** (3), 1181–1188, 2012.

35. An excursion-theoretic approach to stability of discrete-time stochastic hybrid systems. With D. CHATTERJEE. *Applied Mathematics and Optimization* **63** (2), 217–237, 2011.
36. Analysis of the market weights under the Volatility-stabilized market models. *The Annals of Applied Probability* **21** (3), 1180–1213, 2011.
37. Markov processes on time-like graphs. With K. BURDZY. *The Annals of Probability*, **39** (4), 1332–1364, 2011.
38. Archimedes' principle for Brownian liquid. With K. BURDZY and Z-Q. CHEN. *The Annals of Applied Probability* **21** (6), 2053–2074, 2011.
39. A combinatorial analysis of interacting diffusions. With S. CHATTERJEE. *Journal of Theoretical Probability*, **24** (4) 939–968, 2011.
40. A phase transition behavior for Brownian motions interacting through their ranks. With S. CHATTERJEE. *Probability Theory and Related Fields* **147** (1-2) 123–159, 2010.
41. Analysis of continuous strict local martingales using h-transforms. With P. PROTTER. *Stochastic Processes and their Applications*, **120** (8) 1424 –1443, 2010.
42. Crowding of Brownian spheres. With K. BURDZY and J. SWANSON. *ALEA: Latin American Journal of Probability and Mathematical Statistics* **7** 193–205, 2010.
43. Symmetrization of Bernoulli. *Electronic Communications in Probability* **13** 194–197, 2008.
44. One dimensional Brownian particle systems with rank dependent drifts. With J. PITMAN. *The Annals of Applied Probability* **18** (6) 2179–2207, 2008.
45. Computing strategies for achieving acceptability; a Monte-Carlo approach. *Stochastic Processes and their Applications* **117** 1587–1605, 2007.