

Publication list of Charles Bordenave

Last updated: September 16, 2021. Most of my papers are available on my web page.

Submitted articles

- [S1] C. Bordenave and J. Lee. Noise sensitivity for the top eigenvector of a sparse random matrix. *arXiv*, 2106.09570, 2021
- [S2] A. Arras and C. Bordenave. Existence of absolutely continuous spectrum for Galton-Watson random trees. *arXiv*, 2105.10177, 2021
- [S3] A. Backhausz, C. Bordenave, and B. Szegedy. Typicality and entropy of processes on infinite trees. *arXiv*, 2102.02653, 2021
- [S4] C. Bordenave and B. Collins. Strong asymptotic freeness for independent uniform variables on compact groups associated to non-trivial representations. *arXiv*, 2012.08759, 2020
- [S5] C. Bordenave and B. Dubail. Markovian linearization of random walks on groups. *arXiv*, 2011.14127, 2020
- [S6] C. Bordenave, S. Coste, and R. R. Nadakuditi. Detection thresholds in very sparse matrix completion. *arXiv*, 2005.06062, 2020

Journal publications

- [J1] C. Bordenave, D. Chafai, and D. Garcia-Zelada. Convergence of the spectral radius of a random matrix through its characteristic polynomial. *Probab. Theory Related Fields*, to appear
- [J2] S. Belinschi, C. Bordenave, M. Capitaine, and G. Cébron. Outlier eigenvalues for non-hermitian polynomials in independent i.i.d. matrices and deterministic matrices. *Electron. J. Probab.*, 26:no. 100, 1–37, 2021.
- [J3] C. Bordenave and H. Lacoïn. Cutoff at the entropic time for random walks on covered expander graphs. *Journal of the Institute of Mathematics of Jussieu*, page 1–46, 2021.
- [J4] C. Bordenave, G. Lugosi, and N. Zhivotovskiy. Noise sensitivity of the top eigenvector of a Wigner matrix. *Probab. Theory Related Fields*, 177(3-4):1103–1135, 2020.
- [J5] C. Bordenave, Y. Qiu, and Y. Zhang. Spectral gap of sparse bistochastic matrices with exchangeable rows. *Ann. Inst. Henri Poincaré Probab. Stat.*, 56(4):2971–2995, 2020.
- [J6] F. Benaych-Georges, C. Bordenave, and A. Knowles. Spectral radii of sparse random matrices. *Ann. Inst. Henri Poincaré Probab. Stat.*, 56(3):2141–2161, 2020.

- [J7] C. Bordenave, U. Feige, and E. Mossel. Shotgun assembly of random jigsaw puzzles. *Random Structures Algorithms*, 56(4):998–1015, 2020.
- [J8] C. Bordenave and B. Collins. Eigenvalues of random lifts and polynomials of random permutation matrices. *Ann. of Math. (2)*, 190(3):811–875, 2019.
- [J9] C. Bordenave. A new proof of Friedman’s second eigenvalue theorem and its extension to random lifts. *Ann. Sci. Éc. Norm. Supér. (4)*, 53(6):1393–1439, 2020.
- [J10] C. Bordenave and S. Coste. Graphs with prescribed local neighborhoods of their universal coverings. *J. Combin. Theory Ser. B*, 138:196–205, 2019.
- [J11] F. Benaych-Georges, C. Bordenave, and A. Knowles. Largest eigenvalues of sparse inhomogeneous Erdos-Rényi graphs. *Ann. Probab.*, 47(3):1653–1676, 2019.
- [J12] C. Bordenave, P. Caputo, and J. Salez. Cutoff at the “entropic time” for sparse Markov chains. *Probab. Theory Related Fields*, 173(1-2):261–292, 2019.
- [J13] C. Bordenave, P. Caputo, D. Chafaï, and K. Tikhomirov. On the spectral radius of a random matrix: An upper bound without fourth moment. *Ann. Probab.*, 46(4):2268–2286, 2018.
- [J14] C. Bordenave, P. Caputo, and J. Salez. Random walk on sparse random digraphs. *Probab. Theory Related Fields*, 170(3-4):933–960, 2018.
- [J15] C. Bordenave, P. Caputo, D. Chafaï, and D. Piras. Spectrum of large random Markov chains: heavy-tailed weights on the oriented complete graph. *Random Matrices Theory Appl.*, 6(2):1750006, 33, 2017.
- [J16] C. Bordenave and A. Guionnet. Delocalization at small energy for heavy-tailed random matrices. *Comm. Math. Phys.*, 354(1):115–159, 2017.
- [J17] C. Bordenave, M. Lelarge, and L. Massoulié. Nonbacktracking spectrum of random graphs: community detection and nonregular Ramanujan graphs. *Ann. Probab.*, 46(1):1–71, 2018.
- [J18] C. Bordenave, A. Sen, and B. Virág. Mean quantum percolation. *J. Eur. Math. Soc. (JEMS)*, 19(12):3679–3707, 2017.
- [J19] C. Bordenave, P. Germain, and T. Trogdon. An extension of the Derrida-Lebowitz-Speer-Spohn equation. *J. Phys. A*, 48(48):485205, 19, 2015.
- [J20] C. Bordenave and M. Capitaine. Outlier eigenvalues for deformed i.i.d. random matrices. *Comm. Pure Appl. Math.*, 69(11):2131–2194, 2016.
- [J21] C. Bordenave. On quantum percolation in finite regular graphs. *Annales Henri Poincaré*, page 1–33, 2014.

- [J22] C. Bordenave and P. Caputo. Large deviations of empirical neighborhood distribution in sparse random graphs. *Probab. Theory Related Fields*, 163(1-2):149–222, 2015.
- [J23] C. Bordenave. Extinction probability and total progeny of predator-prey dynamics on infinite trees. *Electron. J. Probab.*, 19:no. 20, 33, 2014.
- [J24] C. Bordenave and P. Caputo. A large deviation principle for Wigner matrices without Gaussian tails. *Ann. Probab.*, 42(6):2454–2496, 2014.
- [J25] C. Bordenave, P. Caputo, and D. Chafaï. Spectrum of Markov generators on sparse random graphs. *Comm. Pure Appl. Math.*, 67(4):621–669, 2014.
- [J26] C. Bordenave. On Euclidean random matrices in high dimension. *Electronic Communications in Probability*, 18:1 – 8, 2013.
- [J27] C. Bordenave and A. Guionnet. Localization and delocalization of eigenvectors for heavy-tailed random matrices. *Probab. Theory Related Fields*, 157(3-4):885–953, 2013.
- [J28] F. Barthe and C. Bordenave. Combinatorial optimization over two random point sets. In *Séminaire de Probabilités XLV*, volume 2046 of *Lecture Notes in Math.*, pages 483–536. Springer, Heidelberg, 2013.
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- [J30] C. Bordenave, P. Caputo, and D. Chafaï. Circular law theorem for random Markov matrices. *Probab. Theory Related Fields*, 152(3-4):751–779, 2012.
- [J31] C. Bordenave and D. Chafaï. Around the circular law. *Probability Surveys*, 9(0):1–89, 2012.
- [J32] C. Bordenave. On the spectrum of sum and product of non-Hermitian random matrices. *Electron. Commun. Probab.*, 16:104–113, 2011.
- [J33] C. Bordenave, M. Lelarge, and J. Salez. The rank of diluted random graphs. *Ann. Probab.*, 39(3):1097–1121, 2011.
- [J34] C. Bordenave, P. Caputo, and D. Chafaï. Spectrum of non-Hermitian heavy tailed random matrices. *Communications in Mathematical Physics*, 307(2):513–560, 2011.
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- [J41] C. Bordenave, S. Foss, and V. Shneer. A random multiple-access protocol with spatial interactions. *J. Appl. Probab.*, 46(3):844–865, 2009.
- [J42] D. J. Aldous, C. Bordenave, and M. Lelarge. Dynamic programming optimization over random data: the scaling exponent for near optimal solutions. *SIAM J. Comput.*, 38(6):2382–2410, 2009.
- [J43] C. Bordenave. Eigenvalues of Euclidean random matrices. *Random Structures Algorithms*, 33(4):515–532, 2008.
- [J44] C. Bordenave. On the birth-and-assassination process, with an application to scotching a rumor in a network. *Electron. J. Probab.*, 13(66):2014–2030, 2008.
- [J45] D. J. Aldous, C. Bordenave, and M. Lelarge. Near-minimal spanning trees: a scaling exponent in probability models. *Ann. Inst. Henri Poincaré Probab. Stat.*, 44(5):962–976, 2008.
- [J46] C. Bordenave and G. L. Torrisi. Monte Carlo methods for sensitivity analysis of Poisson-driven stochastic systems, and applications. *Adv. in Appl. Probab.*, 40(2):293–320, 2008.
- [J47] C. Bordenave. Navigation on a Poisson point process. *Ann. Appl. Probab.*, 18(2):708–746, 2008.
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- [J49] F. Baccelli and C. Bordenave. The radial spanning tree of a Poisson point process. *Ann. Appl. Probab.*, 17(1):305–359, 2007.
- [J50] C. Bordenave. Spatial capacity of multiple-access wireless networks. *IEEE Trans. Inform. Theory*, 52(11):4977–4988, 2006.
- [J51] C. Bordenave. Stability of spatial queueing systems. *Adv. in Appl. Probab.*, 38(2):487–504, 2006.
- [J52] C. Bordenave, Y. Gousseau, and F. Roueff. The dead leaves model: a general tessellation modeling occlusion. *Adv. in Appl. Probab.*, 38(1):31–46, 2006.

Conference proceedings

- [C1] C. Bordenave, M. Lelarge, and L. Massoulié. Non-backtracking spectrum of random graphs: community detection and non-regular ramanujan graphs. In *56th Annual IEEE Symposium on Foundations of Computer Science*, 2015.
- [C2] C. Bordenave, D. McDonald, and A. Proutière. Performance of random medium access control, an asymptotic approach. In *Proc. ACM Sigmetrics 2008*, pages 1–12. 2008.
- [C3] C. Bordenave and M. Lelarge. The rank of diluted random graphs. In *Proc. Symposium on Discrete Algorithms 2010*, pages 1389–1402. 2010.
- [C4] C. Bordenave, D. McDonald, and A. Proutière. Random multi-access algorithms in networks with partial interaction: A mean field analysis. In *Proc. International Teletraffic Congress 2007*, pages 779–790. 2007.
- [C5] C. Bordenave, D. McDonald, and A. Proutière. Random multi-access algorithms, a mean field analysis. In *Proc. 43th Allerton Conference on Communication, Control and Computing*. 2005.

Book chapters and other works

- [M1] C. Bordenave. Spectre sans épines des graphes aléatoires. *La gazette des mathématiciens*, 161, juillet 2019.
- [M2] C. Bordenave. Normalité asymptotique des vecteurs propres d’un graphe régulier aléatoire (d’après Backhausz et Szegedy). *Astérisque*, (422, Séminaire Bourbaki. Vol. 2018/2019. Exposés 1151–1165):109–147, 2020.
- [M3] C. Bordenave. Spectral measures of random graphs. In F. Benaych-Georges, D. Chafaï, S. Péché, and B. de Tilière, editors, *Advanced Topics in Random Matrices*, volume 53 of *Panoramas et synthèses*, pages xii+190. Société Mathématique de France, 2018.
- [M4] C. Bordenave and D. Chafaï. Lecture notes on the circular law. In *Modern aspects of random matrix theory*, volume 72 of *Proc. Sympos. Appl. Math.*, pages 1–34. Amer. Math. Soc., Providence, RI, 2014.
- [M5] C. Bordenave, S. Foss, and G. Last. On the greedy walk problem. *Queueing Syst. (QUESTA)*, 68(3-4):333–338, 2011.
- [M6] K. Duffy, C. Bordenave, and D. Leith. Decentralized constraint satisfaction. *IEEE/ACM Transactions on networking*, 21(4):1298–1308, 2013.
- [M7] V. Anantharam and C. Bordenave. Optimal control of interacting particle systems. hal-00397327, 2007.