

List of Publications

Peer-Reviewed Conference Publications

- [C52] Dan Alistarh, Thomas Sauerwald, and Milan Vojnovic. Lock-free algorithms under high memory contention. In *Proceedings of the 34th ACM Symposium on Principles of Distributed Computing (PODC)*, 2015. to appear.
- [C51] Karl Bringmann, Tobias Friedrich, Martin Hoefer, Ralf Rothenberger, and Thomas Sauerwald. Ultra-fast load balancing on scale-free networks. In *Proceedings of the 42nd International Colloquium on Automata, Languages and Programming (ICALP), Track C*, 2015. to appear.
- [C50] George Giakkoupis, Thomas Sauerwald, and Alexandre Stauffer. Randomized rumor spreading in dynamic graphs. In *Proceedings of the 41st International Colloquium on Automata, Languages and Programming (ICALP), Track C*, pages 495–507, 2014.
- [C49] Raunak Shrestha, Ermin Hodzic, Jake Yeung, Kendric Wang, Thomas Sauerwald, Phuong Dao, Shawn Anderson, Himisha Beltran, Mark A. Rubin, Colin C. Collins, Gholamreza Haffari, and S. Chenk Sahinalp. Hit’ndrive: Multi-driver gene prioritization based on hitting time. In *Proceedings of the 18th Annual International Conference on Research in Computational Molecular Biology (RECOMB)*, pages 293–306, 2014.
- [C48] Karl Bringmann, Thomas Sauerwald, Alexandre Stauffer, and He Sun. Balls into bins via local search: Maximum load and cover time. In *Proceedings of the 31st International Symposium on Theoretical Aspects of Computer Science (STACS)*, pages 187–198, 2014.
- [C47] Konstantinos Panagiotou, Ali Pourmiri, and Thomas Sauerwald. Faster rumor spreading with multiple calls. In *Proceedings of the 24th International Symposium on Algorithms and Computation (ISAAC)*, pages 446–456, 2013.
- [C46] Martin Hoefer and Thomas Sauerwald. Brief announcement: threshold load balancing in networks. In *Proceedings of the 32nd ACM Symposium on Principles of Distributed Computing (PODC)*, pages 54–56, 2013.
- [C45] Ralf Klasing, Adrian Kosowski, Dominik Pajak, and Thomas Sauerwald. The multi-agent rotor-router on the ring: a deterministic alternative to parallel random walks. In *Proceedings of the 32nd ACM Symposium on Principles of Distributed Computing (PODC)*, pages 365–374, 2013.
- [C44] Petra Berenbrink, Kamyar Khodamoradi, Thomas Sauerwald, and Alexandre Stauffer. Balls-into-bins with nearly optimal load distribution. In *Proceedings of the 25th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pages 326–335, 2013.
- [C43] Paul Bogdan, Thomas Sauerwald, Alexandre Stauffer, and He Sun. Balls into bins via local search. In *Proceedings of the 24th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 16–34, 2013.
- [C42] Thomas Sauerwald and He Sun. Tight bounds for randomized load balancing on arbitrary network topologies. In *Proceedings of the 53rd IEEE Symposium on Foundations of Computer Science (FOCS)*, pages 341–350, 2012.
- [C41] Daniel M. Kane, Kurt Mehlhorn, Thomas Sauerwald, and He Sun. Counting arbitrary subgraphs in data streams. In *Proceedings of the 39th International Colloquium on Automata, Languages and Programming (ICALP), Track C*, pages 598–609, 2012.

- [C40] Hoda Akbari, Petra Berenbrink, and Thomas Sauerwald. A simple approach for adapting continuous load balancing processes to discrete settings. In *Proceedings of the 31st ACM Symposium on Principles of Distributed Computing (PODC)*, pages 271–280, 2012.
- [C39] George Giakkoupis, Thomas Sauerwald, He Sun, and Philipp Woelfel. Low randomness rumor spreading via hashing. In *Proceedings of the 29th International Symposium on Theoretical Aspects of Computer Science (STACS)*, pages 314–325, 2012.
- [C38] Nikolaos Fountoulakis, Konstantinos Panagiotou, and Thomas Sauerwald. Ultra-fast rumor spreading in social networks. In *Proceedings of the 23rd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1642–1661, 2012.
- [C37] George Giakkoupis and Thomas Sauerwald. Rumor spreading and vertex expansion. In *Proceedings of the 23rd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1623–1641, 2012.
- [C36] Ali Pourmiri and Thomas Sauerwald. Cutoff phenomena for random walks on kneser graphs. In *Proceedings of the Conference on the Applications of Graph Spectra in Computer Science*, 2012.
- [C35] Tobias Friedrich, Thomas Sauerwald, and Alexandre Stauffer. Diameter and broadcast time of random geometric graphs in arbitrary dimensions. In *Proceedings of the 22nd International Symposium on Algorithms and Computation (ISAAC)*, pages 190–199, 2011.
- [C34] Petra Berenbrink, Robert Elsässer, Tom Friedetzky, Lars Nagel, and Thomas Sauerwald. Faster coupon collecting via replication with applications in gossiping. In *Proceedings of the 36th Mathematical Foundations of Computer Science (MFCS)*, pages 72–83, 2011.
- [C33] Petra Berenbrink, Martin Hoefer, and Thomas Sauerwald. Distributed selfish load balancing on networks. In *Proceedings of the 22nd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1487–1497, 2011.
- [C32] Thomas Sauerwald and Alexandre Stauffer. Rumor spreading and vertex expansion on regular graphs. In *Proceedings of the 22nd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 462–475, 2011.
- [C31] Petra Berenbrink, Colin Cooper, Tom Friedetzky, Tobias Friedrich, and Thomas Sauerwald. Randomized diffusion for indivisible loads. In *Proceedings of the 22nd ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 429–439, 2011.
- [C30] Benjamin Doerr, Leslie Ann Goldberg, Lorenz Minder, Thomas Sauerwald, and Christian Scheideler. Stabilizing consensus with the power of two choices. In *Proceedings of the 23rd ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pages 149–158, 2011.
- [C29] Tobias Friedrich and Thomas Sauerwald. The cover time of deterministic random walks. In *Proceedings of the 16th International Conference on Computing and Combinatorics (COCOON)*, pages 130–139, 2010.
- [C28] Benjamin Doerr, Leslie Ann Goldberg, Lorenz Minder, Thomas Sauerwald, and Christian Scheideler. Brief announcement: Stabilizing consensus with the power of two choices. In *Proceedings of the 24th International Symposium on Distributed Computing (DISC)*, pages 528–530, 2010.
- [C27] Petra Berenbrink, Robert Elsässer, and Thomas Sauerwald. Communication complexity of quasirandom rumor spreading. In *Proceedings of the 18th European Symposium on Algorithms (ESA), Track A*, pages 134–145, 2010.

- [C26] Petra Berenbrink, Robert Elsässer, and Thomas Sauerwald. Randomised broadcasting: Memory vs. randomness. In *Proceedings of the 9th Latin American Theoretical Informatics Conference (LATIN)*, pages 306–319, 2010.
- [C25] Thomas Sauerwald. Expansion and the cover time of parallel random walks. In *Proceedings of the 29th ACM Symposium on Principles of Distributed Computing (PODC)*, pages 315–324, 2010.
- [C24] Robert Elsässer and Thomas Sauerwald. Discrete load balancing is (almost) as easy as continuous load balancing. In *Proceedings of the 29th ACM Symposium on Principles of Distributed Computing (PODC)*, pages 346–354, 2010.
- [C23] Milan Bradonjic, Robert Elsässer, Tobias Friedrich, Thomas Sauerwald, and Alexandre Stauffer. Efficient broadcast on random geometric graphs. In *Proceedings of the 21st ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1412–1421, 2010.
- [C22] Petra Berenbrink, Colin Cooper, Robert Elsässer, Tomasz Radzik, and Thomas Sauerwald. Speeding up random walks with neighborhood exploration. In *Proceedings of the 21st ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1422–1435, 2010.
- [C21] Tobias Friedrich, Martin Gairing, and Thomas Sauerwald. Quasirandom load balancing. In *Proceedings of the 21st ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1620–1629, 2010.
- [C20] Benjamin Doerr, Tobias Friedrich, Marvin Künnemann, and Thomas Sauerwald. Quasirandom rumor spreading: An experimental analysis. In *Proceedings of the 11th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 145–153, 2009.
- [C19] Petra Berenbrink and Thomas Sauerwald. The weighted coupon collector’s problem and applications. In *Proceedings of the 15th International Conference on Computing and Combinatorics (COCOON)*, pages 449–458, 2009.
- [C18] Benjamin Doerr, Tobias Friedrich, and Thomas Sauerwald. Quasirandom rumor spreading: Expanders, push vs. pull, and robustness. In *Proceedings of the 36th International Colloquium on Automata, Languages and Programming (ICALP), Track A*, pages 366–377, 2009.
- [C17] Robert Elsässer and Thomas Sauerwald. Tight bounds for the cover time of multiple random walks. In *Proceedings of the 36th International Colloquium on Automata, Languages and Programming (ICALP), Track A*, pages 415–426, 2009.
- [C16] Tobias Friedrich, Thomas Sauerwald, and Dan Vilenchik. Smoothed analysis of balancing networks. In *Proceedings of the 36th International Colloquium on Automata, Languages and Programming (ICALP), Track C*, pages 472–483, 2009.
- [C15] Tobias Friedrich and Thomas Sauerwald. Near-perfect load balancing by randomized rounding. In *Proceedings of the 41st ACM Symposium on Theory of Computing (STOC)*, pages 121–130, 2009.
- [C14] Marios Mavronicolas and Thomas Sauerwald. A randomized, $O(\log w)$ -depth 2 smoothing network. In *Proceedings of the 21st ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pages 178–187, 2009.
- [C13] Robert Elsässer and Thomas Sauerwald. Cover time and broadcast time. In *Proceedings of the 26th International Symposium on Theoretical Aspects of Computer Science (STACS)*, pages 373–384, 2009.

- [C12] Robert Elsässer, Leszek Gasieniec, and Thomas Sauerwald. On radio broadcasting in random geometric graphs. In *Proceedings of the 22nd International Symposium on Theoretical Aspects of Computer Science (STACS)*, pages 212–226, 2008.
- [C11] Henning Meyerhenke, Burkhard Monien, and Thomas Sauerwald. A new diffusion-based multilevel algorithm for computing graph partitions of very high quality. In *Proceedings of the 22nd International Parallel and Distributed Processing Symposium (IPDPS)*, 2008.
- [C10] Marios Mavronicolas and Thomas Sauerwald. The impact of randomization in smoothing networks. In *Proceedings of the 27th ACM Symposium on Principles of Distributed Computing (PODC)*, pages 345–354, 2008.
- [C9] Thomas Sauerwald and Dirk Sudholt. Self-stabilizing cuts in synchronous networks. In *Proceedings of the 15th Structural Information and Communication Complexity (SIROCCO)*, pages 234–246, 2008.
- [C8] Robert Elsässer and Thomas Sauerwald. The power of memory in randomized broadcasting. In *Proceedings of the 19th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 218–227, 2008.
- [C7] Benjamin Doerr, Tobias Friedrich, and Thomas Sauerwald. Quasirandom rumor spreading. In *Proceedings of the 19th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 773–781, 2008.
- [C6] Thomas Sauerwald. On mixing and edge expansion properties in randomized broadcasting. In *Proceedings of the 18th International Symposium on Algorithms and Computation (ISAAC)*, pages 196–207, 2007.
- [C5] Robert Elsässer and Thomas Sauerwald. Broadcasting vs. mixing and information dissemination on cayley graphs. In *Proceedings of the 24th International Symposium on Theoretical Aspects of Computer Science (STACS)*, pages 163–174, 2007.
- [C4] Robert Elsässer and Thomas Sauerwald. On the runtime and robustness of randomized broadcasting. In *Proceedings of the 17th International Symposium on Algorithms and Computation (ISAAC)*, pages 349–358, 2006.
- [C3] Henning Meyerhenke and Thomas Sauerwald. Analyzing disturbed diffusion on networks. In *Proceedings of the 17th International Symposium on Algorithms and Computation (ISAAC)*, pages 429–438, 2006.
- [C2] Robert Elsässer and Thomas Sauerwald. On randomized broadcasting in star graphs. In *Proceedings of the 31st Intl. Workshop Graph-Theoretic Concepts in Computer Science (WG)*, pages 307–318, 2005.
- [C1] Robert Elsässer, Ulf Lorenz, and Thomas Sauerwald. Agent-based information handling in large networks. In *Proceedings of the 29th Mathematical Foundations of Computer Science (MFCS)*, pages 586–598, 2004.

Peer-Reviewed Journal Publications

- [J22] Konstantinos Panagiotou, Xavier Pérez-Giménez, Thomas Sauerwald, and He Sun. Randomized rumor spreading: The effect of the network topology. *Combinatorics Probability & Computing*, 2015. to appear.

- [J21] Lorenz Minder, Thomas Sauerwald, and Sven-Ake Wegner. Asymptotic bounds on the equilateral dimension of hypercubes. *Graphs and Combinatorics*, 2015. to appear.
- [J20] Petra Berenbrink, Colin Cooper, Tom Friedetzky, Tobias Friedrich, and Thomas Sauerwald. Randomized diffusion for indivisible loads. *J. Comput. Syst. Sci.*, 81(1):159–185, 2015.
- [J19] Benjamin Doerr, Tobias Friedrich, and Thomas Sauerwald. Quasirandom rumor spreading. *ACM Transactions on Algorithms*, 11(2):9, 2014.
- [J18] Petra Berenbrink, Martin Hoefer, and Thomas Sauerwald. Distributed selfish load balancing on networks. *ACM Transactions on Algorithms*, 11(1):2, 2014.
- [J17] Ali Pourmiri and Thomas Sauerwald. Cutoff phenomenon for random walks on kneser graphs. *Discrete Applied Mathematics*, 176:100–106, 2014.
- [J16] Tobias Friedrich, Thomas Sauerwald, and Alexandre Stauffer. Diameter and broadcast time of random geometric graphs in arbitrary dimensions. *Algorithmica*, 67(1):65–88, 2013.
- [J15] Artur Czumaj, Robert Elsässer, Leszek Gasieniec, Thomas Sauerwald, and Xin Wang. Fast message dissemination in random geometric networks. *Distributed Computing*, 26(1):1–24, 2013.
- [J14] Tobias Friedrich, Martin Gairing, and Thomas Sauerwald. Quasirandom load balancing. *SIAM Journal on Computing*, 41:747–771, 2012.
- [J13] Henning Meyerhenke and Thomas Sauerwald. Beyond good partition shapes: An analysis of diffusive graph partitioning. *Algorithmica*, 64(3):329–361, 2012.
- [J12] Benjamin Doerr, Tobias Friedrich, Marvin Künnemann, and Thomas Sauerwald. Quasirandom rumor spreading: An experimental analysis. *ACM Journal on Experimental Algorithmics*, 16(3), 2011. Article 3.3.
- [J11] Tobias Friedrich, Thomas Sauerwald, and Dan Vilenchik. Smoothed analysis of balancing networks. *Random Structures & Algorithms*, 39(1):115–138, 2011.
- [J10] Robert Elsässer and Thomas Sauerwald. Tight bounds for the cover time of multiple random walks. *Theoretical Computer Science*, 412(24):2623–2641, 2011.
- [J9] Tobias Friedrich and Thomas Sauerwald. The cover time of deterministic random walks. *Electronic Journal of Combinatorics*, 17(1):243–247, 2010.
- [J8] Thomas Sauerwald. On mixing and edge expansion properties in randomized broadcasting. *Algorithmica*, 56(1):51–88, 2010.
- [J7] Marios Mavronicolas and Thomas Sauerwald. The impact of randomization in smoothing networks. *Distributed Computing*, 22(5-6):381–411, 2010.
- [J6] Thomas Sauerwald and Dirk Sudholt. A self-stabilizing algorithm for cut problems in synchronous networks. *Theoretical Computer Science*, 411(14-15):1599–1612, 2010.
- [J5] Robert Elsässer, Ulf Lorenz, and Thomas Sauerwald. On randomized broadcasting in star graphs. *Discrete Applied Mathematics*, 157(1):126–139, 2009.
- [J4] Henning Meyerhenke, Burkhard Monien, and Thomas Sauerwald. A new diffusion-based multilevel algorithm for computing graph partitions. *Journal of Parallel and Distributed Computing*, 69(9):750–761, 2009.
- [J3] Benjamin Doerr, Tobias Friedrich, and Thomas Sauerwald. Quasirandom rumor spreading on expanders. *Electronic Notes in Discrete Mathematics*, 34:243–247, 2009.

- [J2] Robert Elsässer and Thomas Sauerwald. On the runtime and robustness of randomized broadcasting. *Theoretical Computer Science*, 410(36):3414–3427, 2009.
- [J1] Robert Elsässer, Ulf Lorenz, and Thomas Sauerwald. Agent-based randomized broadcasting in large networks. *Discrete Applied Mathematics*, 155(2), 2007.