

## References

- [1] Martín Abadi and Véronique Cortier. Deciding knowledge in security protocols under equational theories. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 46–58. Springer-Verlag, Berlin-Heidelberg, 2004.
- [2] Michael Abbott, Thorsten Altenkirch, and Neil Ghani. Representing nested inductive types using  $w$ -types. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 59–71. Springer-Verlag, Berlin-Heidelberg, 2004.
- [3] Gagan Aggarwal, Tomás Feder, Rajeev Motwani, and An Zhu. Algorithms for multi-product pricing. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 72–83. Springer-Verlag, Berlin-Heidelberg, 2004.
- [4] Michael Alekhovich, Edward A. Hirsch, and Dmitry Itsykson. Exponential lower bounds for the running time of dppl algorithms on satisfiable formulas. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 84–96. Springer-Verlag, Berlin-Heidelberg, 2004.
- [5] Noga Alon and Vera Asodi. Learning a hidden subgraph. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 110–121. Springer-Verlag, Berlin-Heidelberg, 2004.
- [6] Rajeev Alur, Mikhail Bernadsky, and P. Madhusudan. Optimal reachability for weighted timed games. In Josep Díaz, Juhani Karhumäki,

- Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 122–133. Springer-Verlag, Berlin-Heidelberg, 2004.
- [7] Matthew Andrews and Lisa Zhang. Wavelength assignment in optical networks with fixed fiber capacity. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 134–145. Springer-Verlag, Berlin-Heidelberg, 2004.
- [8] Lars Arge, Ulrich Meyer, and Laura Toma. External memory algorithms for diameter and all-pairs shortest-paths on sparse graphs. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 146–157. Springer-Verlag, Berlin-Heidelberg, 2004.
- [9] Robert Atkey. A  $\lambda$ -calculus for resource separation. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 158–170. Springer-Verlag, Berlin-Heidelberg, 2004.
- [10] Vincenzo Auletta, Roberto De Prisco, Paolo Penna, and Giuseppe Persiano. The power of verification for one-parameter agents. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 171–182. Springer-Verlag, Berlin-Heidelberg, 2004.
- [11] Baruch Awerbuch and Christian Scheideler. Group spreading: A protocol for provably secure distributed name service. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and*

- Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 183–195. Springer-Verlag, Berlin-Heidelberg, 2004.
- [12] Nikhil Bansal, Lisa K. Fleischer, Tracy Kimbrel, Mohammad Mahdian, Baruch Schieber, and Maxim Sviridenko. Further improvements in competitive guarantees for qos buffering. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 196–207. Springer-Verlag, Berlin-Heidelberg, 2004.
- [13] N. Berger, C. Borgs, J.T. Chayes, R.M. D'Souza, and R.D. Kleinberg. Competition-induced preferential attachment. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 208–221. Springer-Verlag, Berlin-Heidelberg, 2004.
- [14] Andreas Björklund, Thore Husfeldt, and Sanjeev Khanna. Approximating longest directed paths and cycles. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 222–233. Springer-Verlag, Berlin-Heidelberg, 2004.
- [15] Carlo Blundo, Paolo D'Arco, and Alfredo De Santis. Definitions and bounds for self-healing key distribution schemes. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 234–245. Springer-Verlag, Berlin-Heidelberg, 2004.
- [16] Mikołaj Bojańczyk and Thomas Colcombet. Tree-walking automata cannot be determinized. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International*

- Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 246–256. Springer-Verlag, Berlin-Heidelberg, 2004.
- [17] Pierre Boudes. Projecting games on hypercoherences. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 257–268. Springer-Verlag, Berlin-Heidelberg, 2004.
- [18] Olivier Bournez and Emmanuel Hainry. An analog characterization of elementarily computable functions over the real numbers. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 269–280. Springer-Verlag, Berlin-Heidelberg, 2004.
- [19] Glenn Bruns and Patrice Godefroid. Model checking with multi-valued logics. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 281–293. Springer-Verlag, Berlin-Heidelberg, 2004.
- [20] Andrei Bulatov and Martin Grohe. The complexity of partition functions. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 294–306. Springer-Verlag, Berlin-Heidelberg, 2004.
- [21] Nadia Busi, Maurizio Gabbrielli, and Gianluigi Zavattaro. Comparing recursion, replication, and iteration in process calculi. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 307–319. Springer-Verlag, Berlin-Heidelberg, 2004.

- [22] Ning Chen, Xiaotie Deng, Xiaoming Sun, and Andrew Chi-Chih Yao. Dynamic price sequence and incentive compatibility. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 320–331. Springer-Verlag, Berlin-Heidelberg, 2004.
- [23] James Cheney. The complexity of equivariant unification. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 332–344. Springer-Verlag, Berlin-Heidelberg, 2004.
- [24] George Christodoulou, Elias Koutsoupias, and Akash Nanavati. Coordination mechanisms. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 345–357. Springer-Verlag, Berlin-Heidelberg, 2004.
- [25] Marek Chrobak, Wojciech Jawor, Jiří Sgall, and Tomáš Tichý. Online scheduling of equal-length jobs: Randomization and restarts help. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 358–370. Springer-Verlag, Berlin-Heidelberg, 2004.
- [26] Bruno Codenotti and Kasturi Varadarajan. Efficient computation of equilibrium prices for markets with leontief utilities. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 371–382. Springer-Verlag, Berlin-Heidelberg, 2004.
- [27] Amin Coja-Oghlan. Coloring semirandom graphs optimally. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors,

- Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 383–395. Springer-Verlag, Berlin-Heidelberg, 2004.
- [28] Artur Czumaj and Christian Sohler. Sublinear-time approximation for clustering via random sampling. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 396–407. Springer-Verlag, Berlin-Heidelberg, 2004.
- [29] Robert Dąbrowski and Wojtek Plandowski. Solving two-variable word equations. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 408–419. Springer-Verlag, Berlin-Heidelberg, 2004.
- [30] Anuj Dawar, Erich Grädel, and Stephan Kreutzer. Backtracking games and inflationary fixed points. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 420–432. Springer-Verlag, Berlin-Heidelberg, 2004.
- [31] Luca de Alfaro, Marco Faella, and Mariëlle Stoelinga. Linear and branching metrics for quantitative transition systems. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 97–109. Springer-Verlag, Berlin-Heidelberg, 2004.
- [32] Xiaotie Deng and Guojun Li. A ptas for embedding hypergraph in a cycle. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 433–444. Springer-Verlag, Berlin-Heidelberg, 2004.

- [33] Yuxin Deng and Davide Sangiorgi. Towards an algebraic theory of typed mobile processes. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 445–456. Springer-Verlag, Berlin-Heidelberg, 2004.
- [34] Bruno Durand, Andrei Muchnik, Maxim Ushakov, and Nikolai Vereshchagin. Ecological turing machines. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 457–468. Springer-Verlag, Berlin-Heidelberg, 2004.
- [35] Christoph Dürr, Mark Heiligman, Peter Høyer, and Mehdi Mhalla. Quantum query complexity of some graph problems. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 481–493. Springer-Verlag, Berlin-Heidelberg, 2004.
- [36] Zdeněk Dvořák, Daniel Král', and Ondřej Pangrác. Locally consistent constraint satisfaction problems. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 469–480. Springer-Verlag, Berlin-Heidelberg, 2004.
- [37] A. Edalat and D. Pattinson. A domain theoretic account of picard's theorem. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 494–505. Springer-Verlag, Berlin-Heidelberg, 2004.
- [38] Claudia Faggian. Interactive observability in ludics. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Pro-*

- ceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 506–518. Springer-Verlag, Berlin-Heidelberg, 2004.
- [39] Uriel Feige and Eran Ofek. Easily refutable subformulas of large random 3cnf formulas. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 519–530. Springer-Verlag, Berlin-Heidelberg, 2004.
- [40] Joan Feigenbaum, Sampath Kannan, Andrew McGregor, Siddharth Suri, and Jian Zhang. On graph problems in a semi-streaming model. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 531–543. Springer-Verlag, Berlin-Heidelberg, 2004.
- [41] Lisa Fleischer. Linear tolls suffice: New bounds and algorithms for tolls in single source networks. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 544–554. Springer-Verlag, Berlin-Heidelberg, 2004.
- [42] Jörg Flum, Martin Grohe, and Mark Weyer. Bounded fixed-parameter tractability and  $\log^2 n$  nondeterministic bits. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 555–567. Springer-Verlag, Berlin-Heidelberg, 2004.
- [43] Fedor V. Fomin, Dieter Kratsch, and Ioan Todinca. Exact (exponential) algorithms for treewidth and minimum fill-in. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16,*



- 2004), volume 3142 of *LNCS*, pages 568–580. Springer-Verlag, Berlin-Heidelberg, 2004.
- [44] Fedor V. Fomin and Dimitrios M. Thilikos. Fast parameterized algorithms for graphs on surfaces: Linear kernel and exponential speed-up. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 581–592. Springer-Verlag, Berlin-Heidelberg, 2004.
- [45] Dimitris Fotakis, Spyros Kontogiannis, and Paul Spirakis. Selfish unsplittable flows. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 593–605. Springer-Verlag, Berlin-Heidelberg, 2004.
- [46] Gianni Franceschini and Roberto Grossi. A general technique for managing strings in comparison-driven data structures. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 606–617. Springer-Verlag, Berlin-Heidelberg, 2004.
- [47] Alain Frisch and Luca Cardelli. Greedy regular expression matching. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 618–629. Springer-Verlag, Berlin-Heidelberg, 2004.
- [48] Bin Fu and Wei Wang. A  $2^{O(n^{1-\frac{1}{d}} \log n)}$  time algorithm for  $d$ -dimensional protein folding in the hp-model. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 630–644. Springer-Verlag, Berlin-Heidelberg, 2004.

- [49] Leszek Gaşieniec, Evangelos Kranakis, Andrzej Pelc, and Qin Xin. Deterministic m2m multicast in radio networks. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 670–682. Springer-Verlag, Berlin-Heidelberg, 2004.
- [50] Martin Gairing, Thomas Lücking, Marios Mavronicolas, Burkhard Monien, and Manuel Rode. Nash equilibria in discrete routing games with convex latency functions. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 645–657. Springer-Verlag, Berlin-Heidelberg, 2004.
- [51] Rajiv Gandhi, Magnús M. Halldórsson, Guy Kortsarz, and Hadas Shachnai. Improved results for data migration and open shop scheduling. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 658–669. Springer-Verlag, Berlin-Heidelberg, 2004.
- [52] D.R. Ghica, A.S. Murawski, and C.-H.L. Ong. Syntactic control of concurrency. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 683–694. Springer-Verlag, Berlin-Heidelberg, 2004.
- [53] Venkatesan Guruswami and Piotr Indyk. Linear-time list decoding in error-free settings. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 695–707. Springer-Verlag, Berlin-Heidelberg, 2004.
- [54] Esfandiar Haghverdi and Philip Scott. A categorical model for the geometry of interaction. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 708–720. Springer-Verlag, Berlin-Heidelberg, 2004.

- istö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 708–720. Springer-Verlag, Berlin-Heidelberg, 2004.
- [55] Shirley Halevy and Eyal Kushilevitz. Testing monotonicity over graph products. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 721–732. Springer-Verlag, Berlin-Heidelberg, 2004.
- [56] Eran Halperin and Richard M. Karp. The minimum-entropy set cover problem. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 733–744. Springer-Verlag, Berlin-Heidelberg, 2004.
- [57] Robert Harper. Self-adjusting computation. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1–2. Springer-Verlag, Berlin-Heidelberg, 2004.
- [58] Prahladh Harsha, Yuval Ishai, Joe Kilian, Kobbi Nissim, and S. Venkatesh. Communication versus computation. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 745–756. Springer-Verlag, Berlin-Heidelberg, 2004.
- [59] Brent Heeringa and Micah Adler. Optimal website design with the constrained subtree selection problem. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 757–769. Springer-Verlag, Berlin-Heidelberg, 2004.

- [60] Monika Henzinger. The past, present, and future of web search engines. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 3–3. Springer-Verlag, Berlin-Heidelberg, 2004.
- [61] Martin Hofmann. What do program logics and type systems have in common? In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 4–7. Springer-Verlag, Berlin-Heidelberg, 2004.
- [62] Shlomo Hoory, Avner Magen, Steven Myers, and Charles Rackoff. Simple permutations mix well. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 770–781. Springer-Verlag, Berlin-Heidelberg, 2004.
- [63] Piotr Indyk, Moshe Lewenstein, Ohad Lipsky, and Ely Porat. Closest pair problems in very high dimensions. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 782–792. Springer-Verlag, Berlin-Heidelberg, 2004.
- [64] Emmanuel Jeandel. Universality in quantum computation. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 793–804. Springer-Verlag, Berlin-Heidelberg, 2004.
- [65] Raja Jothi and Balaji Raghavachari. Approximation algorithms for the capacitated minimum spanning tree problem and its variants in network design. In Josep Díaz, Juhani Karhumäki, Arto Lepistö,

- and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 805–818. Springer-Verlag, Berlin-Heidelberg, 2004.
- [66] Bala Kalyanasundaram and Mahe Velauthapillai. Fairness to all while downsizing. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 819–830. Springer-Verlag, Berlin-Heidelberg, 2004.
- [67] Shin-ya Katsumata. A generalisation of pre-logical predicates to simply typed formal systems. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 831–845. Springer-Verlag, Berlin-Heidelberg, 2004.
- [68] Telikepalli Kavitha, Kurt Mehlhorn, Dimitrios Michail, and Katarzyna Paluch. A faster algorithm for minimum cycle basis of graphs. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 846–857. Springer-Verlag, Berlin-Heidelberg, 2004.
- [69] Robert Krauthgamer and James R. Lee. The black-box complexity of nearest neighbor search. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 858–869. Springer-Verlag, Berlin-Heidelberg, 2004.
- [70] Michal Kunc. Regular solutions of language inequalities and well quasi-orders. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 870–881. Springer-Verlag, Berlin-Heidelberg, 2004.

- [71] J. Laird. A calculus of coroutines. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 882–893. Springer-Verlag, Berlin-Heidelberg, 2004.
- [72] Emmanuelle Lebhar and Nicolas Schabanel. Almost optimal decentralized routing in long-range contact networks. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 894–905. Springer-Verlag, Berlin-Heidelberg, 2004.
- [73] Markus Lohrey. Word problems on compressed words. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 906–918. Springer-Verlag, Berlin-Heidelberg, 2004.
- [74] Rune B. Lyngsø. Complexity of pseudoknot prediction in simple models. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 919–931. Springer-Verlag, Berlin-Heidelberg, 2004.
- [75] Frédéric Magniez and Michel de Rougemont. Property testing of regular tree languages. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 932–944. Springer-Verlag, Berlin-Heidelberg, 2004.
- [76] Keye Martin. Entropy as a fixed point. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and*

- Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 945–958. Springer-Verlag, Berlin-Heidelberg, 2004.
- [77] K. Meer. Transparent long proofs: A first pcp theorem for  $np_r$ . In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 959–970. Springer-Verlag, Berlin-Heidelberg, 2004.
- [78] Wolfgang Merkle, Nenad Mihailović, and Theodore A. Slaman. Some results on effective randomness. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 983–995. Springer-Verlag, Berlin-Heidelberg, 2004.
- [79] Gatis Midrijānis. A polynomial quantum query lower bound for the set equality problem. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 996–1005. Springer-Verlag, Berlin-Heidelberg, 2004.
- [80] Markus Müller-Olm and Helmut Seidl. A note on karr’s algorithm. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1016–1028. Springer-Verlag, Berlin-Heidelberg, 2004.
- [81] J. Ian Munro and S. Srinivasa Rao. Succinct representations of functions. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1006–1015. Springer-Verlag, Berlin-Heidelberg, 2004.

- [82] S. Nikolettseas, C. Raptopoulos, and P. Spirakis. The existence and efficient construction of large independent sets in general random intersection graphs. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1029–1040. Springer-Verlag, Berlin-Heidelberg, 2004.
- [83] Rafail Ostrovsky, Charles Rackoff, and Adam Smith. Efficient consistency proofs for generalized queries on a committed database. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1041–1053. Springer-Verlag, Berlin-Heidelberg, 2004.
- [84] Katarzyna Paluch. A  $2\frac{1}{8}$ -approximation algorithm for rectangle tiling. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1054–1065. Springer-Verlag, Berlin-Heidelberg, 2004.
- [85] Alexander A. Razborov. Feasible proofs and computations: Partnership and fusion. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 8–14. Springer-Verlag, Berlin-Heidelberg, 2004.
- [86] Grigore Roşu. Extensional theories and rewriting. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1066–1079. Springer-Verlag, Berlin-Heidelberg, 2004.
- [87] Wojciech Rytter. Grammar compression, *lz*-encodings, and string algorithms with implicit input. In Josep Díaz, Juhani Karhumäki, Arto



- Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 15–27. Springer-Verlag, Berlin-Heidelberg, 2004.
- [88] S. Cenk Sahinalp and Andrey Utis. Hardness of string similarity search and other indexing problems. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1080–1098. Springer-Verlag, Berlin-Heidelberg, 2004.
- [89] Marko Samer and Helmut Veith. A syntactic characterization of distributive ltl queries. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1099–1110. Springer-Verlag, Berlin-Heidelberg, 2004.
- [90] Peter Sanders, Naveen Sivadasan, and Martin Skutella. Online scheduling with bounded migration. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1111–1122. Springer-Verlag, Berlin-Heidelberg, 2004.
- [91] Nicole Schweikardt. On the expressive power of monadic least fixed point logic. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1123–1135. Springer-Verlag, Berlin-Heidelberg, 2004.
- [92] Helmut Seidl, Thomas Schwentick, Anca Muscholl, and Peter Habermehl. Counting in trees for free. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1136–1149. Springer-Verlag, Berlin-Heidelberg, 2004.

- [93] Olivier Serre. Games with winning conditions of high borel complexity. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1150–1162. Springer-Verlag, Berlin-Heidelberg, 2004.
- [94] Alan Skelley. Propositional  $p$ space reasoning with boolean programs versus quantified boolean formulas. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1163–1175. Springer-Verlag, Berlin-Heidelberg, 2004.
- [95] Michael Soltys.  $la$ , permutations, and the hajós calculus. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1176–1187. Springer-Verlag, Berlin-Heidelberg, 2004.
- [96] Michael Toftdal. A calibration of ineffective theorems of analysis in a hierarchy of semi-classical logical principles. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1188–1200. Springer-Verlag, Berlin-Heidelberg, 2004.
- [97] Dieter van Melkebeek and Ran Raz. A time lower bound for satisfiability. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 971–982. Springer-Verlag, Berlin-Heidelberg, 2004.
- [98] Sergei Vassilvitskii and Mihalis Yannakakis. Efficiently computing succinct trade-off curves. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International*

*Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1201–1213. Springer-Verlag, Berlin-Heidelberg, 2004.

- [99] Hagen Völzer. On randomization versus synchronization in distributed systems. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1214–1226. Springer-Verlag, Berlin-Heidelberg, 2004.
- [100] Ryan Williams. A new algorithm for optimal constraint satisfaction and its implications. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1227–1237. Springer-Verlag, Berlin-Heidelberg, 2004.
- [101] Mihalis Yannakakis. Testing, optimization, and games. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 28–45. Springer-Verlag, Berlin-Heidelberg, 2004.
- [102] Shengyu Zhang. On the power of ambainis's lower bounds. In Josep Díaz, Juhani Karhumäki, Arto Lepistö, and Donald Sannella, editors, *Proceedings of the 31st International Colloquium on Automata, Languages and Programming, ICALP'2004 (Turku, Finland, July 12-16, 2004)*, volume 3142 of *LNCS*, pages 1238–1250. Springer-Verlag, Berlin-Heidelberg, 2004.