

# Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques

20th International Workshop, APPROX 2017, and  
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August 16–18, 2017, Berkeley, CA, USA

Edited by

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# ■ Contents

Preface	
<i>Klaus Jansen, José D. P. Rolim, Santosh S. Vempala, and David P. Williamson</i>	ix
Program Committees	
.....	xi
External Reviewers	
.....	xiii
List of Authors	
.....	xv

## Regular Papers

### Contributed Talks of APPROX

Min-Cost Bipartite Perfect Matching with Delays	
<i>Itai Ashlagi, Yossi Azar, Moses Charikar, Ashish Chiplunkar, Ofir Geri, Haim Kaplan, Rahul Makhijani, Yuyi Wang, and Roger Wattenhofer</i>	1:1–1:20
Global and Fixed-Terminal Cuts in Digraphs	
<i>Kristóf Bérczi, Karthekeyan Chandrasekaran, Tamás Király, Euiwoong Lee, and Chao Xu</i>	2:1–2:20
A PTAS for Three-Edge-Connected Survivable Network Design in Planar Graphs	
<i>Glencora Borradaile and Baigong Zheng</i>	3:1–3:13
The Quest for Strong Inapproximability Results with Perfect Completeness	
<i>Joshua Brakensiek and Venkatesan Guruswami</i>	4:1–4:20
Scheduling Problems over Network of Machines	
<i>Zachary Friggstad, Arnoosh Golestanian, Kamyar Khodamoradi, Christopher Martin, Mirmahdi Rahgoshay, Mohsen Rezapour, Mohammad R. Salavatipour, and Yifeng Zhang</i>	5:1–5:18
Approximating Incremental Combinatorial Optimization Problems	
<i>Michel X. Goemans and Francisco Unda</i>	6:1–6:14
Stochastic Unsplittable Flows	
<i>Anupam Gupta and Archit Karandikar</i>	7:1–7:19
Streaming Complexity of Approximating Max 2CSP and Max Acyclic Subgraph	
<i>Venkatesan Guruswami, Ameya Velingker, and Santhoshini Velusamy</i>	8:1–8:19
Symmetric Interdiction for Matching Problems	
<i>Samuel Haney, Bruce Maggs, Biswaroop Maiti, Debmalya Panigrahi, Rajmohan Rajaraman, and Ravi Sundaram</i>	9:1–9:19
A Lottery Model for Center-Type Problems with Outliers	
<i>David G. Harris, Thomas Pensyl, Aravind Srinivasan, and Khoa Trinh</i>	10:1–10:19



Streaming Algorithms for Maximizing Monotone Submodular Functions under a Knapsack Constraint <i>Chien-Chung Huang, Naonori Kakimura, and Yuichi Yoshida</i> .....	11:1–11:14
Fractional Set Cover in the Streaming Model <i>Piotr Indyk, Sepideh Mahabadi, Ronitt Rubinfeld, Jonathan Ullman, Ali Vakilian, and Anak Yodpinyanee</i> .....	12:1–12:20
Online Strip Packing with Polynomial Migration <i>Klaus Jansen, Kim-Manuel Klein, Maria Kosche, and Leon Ladewig</i> .....	13:1–13:18
Density Independent Algorithms for Sparsifying $k$ -Step Random Walks <i>Gorav Jindal, Pavel Kolev, Richard Peng, and Saurabh Sawlani</i> .....	14:1–14:17
Maximum Matching in Two, Three, and a Few More Passes over Graph Stream <i>Sagar Kale and Sumedh Tirodkar</i> .....	15:1–15:21
Submodular Secretary Problems: Cardinality, Matching, and Linear Constraints <i>Thomas Kesselheim and Andreas Tönnis</i> .....	16:1–16:22
On the Integrality Gap of the Prize-Collecting Steiner Forest LP <i>Jochen Könemann, Neil Olver, Kanstantsin Pashkovich, R. Ravi, Chaitanya Swamy, and Jens Vygen</i> .....	17:1–17:13
Approximating Unique Games Using Low Diameter Graph Decomposition <i>Vedat Levi Alev and Lap Chi Lau</i> .....	18:1–18:15
Greedy Minimization of Weakly Supermodular Set Functions <i>Edo Liberty and Maxim Sviridenko</i> .....	19:1–19:11
Renyi Entropy Estimation Revisited <i>Maciej Obremski and Maciej Skorski</i> .....	20:1–20:15
Approximating Sparsest Cut in Low Rank Graphs via Embeddings from Approximately Low Dimensional Spaces <i>Yuval Rabani and Rakesh Venkat</i> .....	21:1–21:14
When Are Welfare Guarantees Robust? <i>Tim Roughgarden, Inbal Talgam-Cohen, and Jan Vondrák</i> .....	22:1–22:23

## Contributed Talks of RANDOM

Glauber Dynamics for Ising Model on Convergent Dense Graph Sequences <i>Rupam Acharya and Daniel Štefankovič</i> .....	23:1–23:22
On the Expansion of Group-Based Lifts <i>Naman Agarwal, Karthekeyan Chandrasekaran, Alexandra Kolla, and Vivek Madan</i> .....	24:1–24:13
Efficient Removal Lemmas for Matrices <i>Noga Alon and Omri Ben-Eliezer</i> .....	25:1–25:18
The String of Diamonds Is Tight for Rumor Spreading <i>Omer Angel, Abbas Mehrabian, and Yuval Peres</i> .....	26:1–26:9

Sharper Bounds for Regularized Data Fitting  
*Haim Avron, Kenneth L. Clarkson, and David P. Woodruff* ..... 27:1–27:22

The Lovász Theta Function for Random Regular Graphs and Community  
 Detection in the Hard Regime  
*Jess Banks, Robert Kleinberg, and Cristopher Moore* ..... 28:1–28:22

Cutoff for a Stratified Random Walk on the Hypercube  
*Anna Ben-Hamou and Yuval Peres* ..... 29:1–29:10

Lower Bounds for 2-Query LCCs over Large Alphabet  
*Arnab Bhattacharyya, Sivakanth Gopi, and Avishay Tal* ..... 30:1–30:20

Sum-of-Squares Certificates for Maxima of Random Tensors on the Sphere  
*Vijay Bhattiprolu, Venkatesan Guruswami, and Euiwoong Lee* ..... 31:1–31:20

Continuous Monitoring of  $\ell_p$  Norms in Data Streams  
*Jarostaw Blasiok, Jian Ding, and Jelani Nelson* ..... 32:1–32:13

Vertex Isoperimetry and Independent Set Stability for Tensor Powers of Cliques  
*Joshua Brakensiek* ..... 33:1–33:15

Polynomial Mixing of the Edge-Flip Markov Chain for Unbiased Dyadic Tilings  
*Sarah Cannon, David A. Levin, and Alexandre Stauffer* ..... 34:1–34:21

Agnostic Learning from Tolerant Natural Proofs  
*Marco L. Carmosino, Russell Impagliazzo, Valentine Kabanets,  
 and Antonina Kolokolova* ..... 35:1–35:19

On the Complexity of Constrained Determinantal Point Processes  
*L. Elisa Celis, Amit Deshpande, Tarun Kathuria, Damian Straszak,  
 and Nisheeth K. Vishnoi* ..... 36:1–36:22

Sample-Based High-Dimensional Convexity Testing  
*Xi Chen, Adam Freilich, Rocco A. Servedio, and Timothy Sun* ..... 37:1–37:20

Adaptivity Is Exponentially Powerful for Testing Monotonicity of Halfspaces  
*Xi Chen, Rocco A. Servedio, Li-Yang Tan, and Erik Waingarten* ..... 38:1–38:21

On Axis-Parallel Tests for Tensor Product Codes  
*Alessandro Chiesa, Peter Manohar, and Igor Shinkar* ..... 39:1–39:22

Charting the Replica Symmetric Phase  
*Amin Coja-Oghlan, Charilaos Efthymiou, Nor Jaafari, Mihyun Kang,  
 and Tobias Kapetanopoulos* ..... 40:1–40:17

Probabilistic Logarithmic-Space Algorithms for Laplacian Solvers  
*Dean Doron, François Le Gall, and Amnon Ta-Shma* ..... 41:1–41:20

Streaming Periodicity with Mismatches  
*Funda Ergün, Elena Grigorescu, Erfan Sadeqi Azer, and Samson Zhou* ..... 42:1–42:21

Locality via Partially Lifted Codes  
*S. Luna Frank-Fischer, Venkatesan Guruswami, and Mary Wootters* ..... 43:1–43:17

Testing Hereditary Properties of Sequences  
*Cody R. Freitag, Eric Price, and William J. Swartworth* ..... 44:1–44:10

Traveling in Randomly Embedded Random Graphs <i>Alan Frieze and Wesley Pegden</i> .....	45:1–45:17
The Minrank of Random Graphs <i>Alexander Golovnev, Oded Regev, and Omri Weinstein</i> .....	46:1–46:13
Efficiently Decodable Codes for the Binary Deletion Channel <i>Venkatesan Guruswami and Ray Li</i> .....	47:1–47:13
On Some Computations on Sparse Polynomials <i>Ilya Volkovich</i> .....	48:1–48:21
Communication Complexity of Statistical Distance <i>Thomas Watson</i> .....	49:1–49:10



## ■ Preface

This volume contains the papers presented at the 20th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2017) and the 21st International Workshop on Randomization and Computation (RANDOM 2017), which took place concurrently at the at University of California in Berkeley, USA during August 16–18, 2017.

APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally difficult problems, and was the 20th in the series after Aalborg (1998), Berkeley (1999), Saarbrücken (2000), Berkeley (2001), Rome (2002), Princeton (2003), Cambridge (2004), Berkeley (2005), Barcelona (2006), Princeton (2007), Boston (2008), Berkeley (2009), Barcelona (2010), Princeton (2011), Boston (2012), Berkeley (2013), Barcelona (2014), Princeton (2015), and Paris (2016). RANDOM is concerned with applications of randomness to computational and combinatorial problems, and was the 21st workshop in the series following Bologna (1997), Barcelona (1998), Berkeley (1999), Geneva (2000), Berkeley (2001), Harvard (2002), Princeton (2003), Cambridge (2004), Berkeley (2005), Barcelona (2006), Princeton (2007), Boston (2008), Berkeley (2009), Barcelona (2010), Princeton (2011), Boston (2012), Berkeley (2013), Barcelona (2014), Princeton (2015), and Paris (2016).

Topics of interest for APPROX and RANDOM are: design and analysis of approximation algorithms, hardness of approximation, small space algorithms, sub-linear time algorithms, streaming algorithms, embeddings and metric space methods, spectral methods, mathematical programming methods, combinatorial optimization in graphs and networks, algorithmic game theory, mechanism design and economics, computational geometric problems, distributed and parallel approximation, approximate learning, online algorithms, approaches that go beyond worst case analysis, design and analysis of randomized algorithms, randomized complexity theory, pseudorandomness and derandomization, random combinatorial structures, random walks/Markov chains, expander graphs and randomness extractors, probabilistic proof systems, random projections and embeddings, error-correcting codes, average-case analysis, property testing, computational learning theory, and other applications of approximation and randomness.

The volume contains 22 contributed papers, selected by the APPROX Program Committee out of 60 submissions, and 27 contributed papers, selected by the RANDOM Program Committee out of 72 submissions.

We would like to thank all the authors who submitted papers, the invited speakers, Uriel Feige and Moses Charikar, the members of the Program Committees, and the external reviewers. We gratefully acknowledge the Department of Computer Science of the Christian-Albrechts-Universität zu Kiel, the Department of Computer Science of the University of Geneva, the College of Computing of the Georgia Institute of Technology, and the School of Operations Research and Information Engineering of the Cornell University.

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