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Soggetti	Algorithms Computer science - Mathematics Discrete mathematics Computer networks Computer graphics Bioinformatics Discrete Mathematics in Computer Science Computer Communication Networks Computer Graphics Computational and Systems Biology Symbolic and Algebraic Manipulation
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Termination of Multipartite Graph Series Arising from Complex Network Modelling -- Simple Cuts Are Fast and Good: Optimum Right-Angled Cuts in Solid Grids -- Evacuation of Rectilinear Polygons -- A Fast Algorithm for Powerful Alliances in Trees -- NP-Completeness of Spreading Colored Points -- Construction of Mixed Covering Arrays of Variable Strength Using a Tabu Search Approach -- Feasibility-Based Bounds Tightening via Fixed Points -- A Characterisation of Stable Sets

in Games with Transitive Preference -- Linear Coherent Bi-cluster Discovery via Beam Detection and Sample Set Clustering -- An Iterative Algorithm of Computing the Transitive Closure of a Union of Parameterized Affine Integer Tuple Relations -- Bases of Primitive Nonpowerful Sign Patterns -- Extended Dynamic Subgraph Statistics Using h-Index Parameterized Data Structures -- Discrete Optimization with Polynomially Detectable Boundaries and Restricted Level Sets -- Finding Strong Bridges and Strong Articulation Points in Linear Time -- Robust Optimization of Graph Partitioning and Critical Node Detection in Analyzing Networks -- An Efficient Algorithm for Chinese Postman Walk on Bi-directed de Bruijn Graphs -- On the Hardness and Inapproximability of Optimization Problems on Power Law Graphs -- Cyclic Vertex Connectivity of Star Graphs -- The Number of Shortest Paths in the  $(n, k)$ -Star Graphs -- Complexity of Determining the Most Vital Elements for the 1-median and 1-center Location Problems -- PTAS for Minimum Connected Dominating Set with Routing Cost Constraint in Wireless Sensor Networks -- A Primal-Dual Approximation Algorithm for the Asymmetric Prize-Collecting TSP -- Computing Toolpaths for 5-Axis NC Machines -- A Trichotomy Theorem for the Approximate Counting of Complex-Weighted Bounded-Degree Boolean CSPs -- A Randomized Algorithm for Weighted Approximation of Points by a Step Function -- Approximating Multilinear Monomial Coefficients and Maximum Multilinear Monomials in Multivariate Polynomials -- The Union of Colorful Simplices Spanned by a Colored Point Set -- Compact Visibility Representation of 4-Connected Plane Graphs -- Some Variations on Constrained Minimum Enclosing Circle Problem -- Searching for an Axis-Parallel Shoreline -- Bounded Length, 2-Edge Augmentation of Geometric Planar Graphs -- Scheduling Packets with Values and Deadlines in Size-Bounded Buffers -- Transporting Jobs through a Processing Center with Two Parallel Machines.

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#### Sommario/riassunto

The 4th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2010) took place in Big Island, Hawaii, USA, December 18–20, 2010. Past COCOA conferences were held in Xi'an, China (2007), Newfoundland, Canada (2008) and Huangshan, China (2009). COCOA 2010 provided a forum for researchers working in the areas of combinatorial optimization and its applications. In addition to theoretical results, the conference also included recent works on experimental and applied research of general algorithmic interest. The Program Committee received 108 submissions from more than 23 countries and regions, including Australia, Austria, Canada, China, Denmark, France, Germany, Hong Kong, India, Italy, Japan, Korea, Mexico, New Zealand, Poland, Slovak Republic, Spain, Sweden, Switzerland, Taiwan, UK, USA, Vietnam, etc. Among the 108 submissions, 49 regular papers were selected for presentation at the conference and are included in this volume. Some of these papers will be selected for publication in a special issue of the Journal of Combinatorial Optimization, a special issue of Theoretical Computer Science, a special issue of Optimization Letters, and a special issue of Discrete Mathematics, Algorithms and Applications under the standard refereeing procedure.

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