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Soggetti	Artificial intelligence Numerical analysis Computer science—Mathematics Discrete mathematics Computer networks Information technology—Management Artificial Intelligence Numerical Analysis Discrete Mathematics in Computer Science Computer Communication Networks Computer Application in Administrative Data Processing
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Nota di contenuto	Invited Papers -- Integration of Rules and Optimization in Plant PowerOps -- Embedded Systems Design: Optimization Challenges -- Models for Solving the Travelling Salesman Problem -- Technical Papers -- Set Variables and Local Search -- The Temporal Knapsack Problem and Its Solution -- Simplifying Diagnosis Using LSAT: A Propositional Approach to Reasoning from First Principles -- The tree Constraint -- Filtering Algorithms for the NValue Constraint -- Identifying and Exploiting Problem Structures Using Explanation-Based Constraint Programming -- A Hybrid Algorithm for a Class of Resource Constrained Scheduling Problems -- On the Minimal Steiner Tree

Subproblem and Its Application in Branch-and-Price -- Constraint Programming Based Column Generation for Employee Timetabling -- Scheduling Social Golfers Locally -- Multiconsistency and Robustness with Global Constraints -- Mixed Discrete and Continuous Algorithms for Scheduling Airborne Astronomy Observations -- Shorter Path Constraints for the Resource Constrained Shortest Path Problem -- Improving the Cooperation Between the Master Problem and the Subproblem in Constraint Programming Based Column Generation -- Group Construction for Airline Cabin Crew: Comparing Constraint Programming with Branch and Price -- A Search-Infer-and-Relax Framework for Integrating Solution Methods -- Combining Arc-Consistency and Dual Lagrangean Relaxation for Filtering CSPs -- Symmetry Breaking and Local Search Spaces -- Combination of Among and Cardinality Constraints -- On the Tractability of Smooth Constraint Satisfaction Problems -- A SAT-Based Decision Procedure for Mixed Logical/Integer Linear Problems -- Symmetry and Search in a Network Design Problem -- Integrating CSP Decomposition Techniques and BDDs for Compiling Configuration Problems -- Formulations and Reformulations in Integer Programming -- Nondeterministic Control for Hybrid Search -- Computing Explanations for the Unary Resource Constraint.

Sommario/riassunto

The 2nd International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR2005) was held in Prague, Czech Republic, during May 31–June 1, 2005. The conference is intended primarily as a forum to focus on the integration and hybridization of the approaches of constraint programming (CP), artificial intelligence (AI), and operations research (OR) technologies for solving large-scale and complex real-life optimization problems. Therefore, CPAIOR is never far from industrial applications. The high number of submissions received this year, almost 100 papers, in witness to the interest of the research community in this conference. From these submissions, we chose 26 to be published in full in the proceedings. This volume includes summaries of the invited talks of CPAIOR: one from industry, one from the embedded system research community, and one from the operations research community. The invited speakers were: Filippo Focacci from ILOGS.A., France, one of the leading companies in the field; Paul Pop, professor in the Embedded Systems Lab in the Computer and Information Science Department, Linköping University; and Paul Williams, full professor of Operations Research at the London School of Economics. The day before CPAIOR, a Master Class was organized by Gilles Pesant, where leading researchers gave introductory and overview talks in the area of metaheuristics and constraint programming. The Master Class was intended for PhD students, researchers, and practitioners. We are very grateful to Gilles who brought this excellent program together. For conference publicity we warmly thank Willem Jan van Hoes and Petr Vím who did a great job with the high number of submissions received.
