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Nota di contenuto	Logics, Theories, and Decision Procedures I -- A Comprehensive Framework for Combined Decision Procedures -- Connecting Many-Sorted Structures and Theories Through Adjoint Functions -- Combining Data Structures with Nonstably Infinite Theories Using Many-Sorted Logic -- On a Rewriting Approach to Satisfiability Procedures: Extension, Combination of Theories and an Experimental Appraisal -- Interface Formalisms -- Sociable Interfaces -- Logics, Theories, and Decision Procedures II -- About the Combination of Trees and Rational Numbers in a Complete First-Order Theory -- A Complete Temporal and Spatial Logic for Distributed Systems -- Constraint Solving and Programming -- Hybrid CSP Solving -- An Efficient Decision Procedure for UTVPI Constraints -- Declarative

Constraint Programming with Definitional Trees -- Logical Problem Analysis and Encoding I -- Logical Analysis of Hash Functions -- Combination Issues in Rewriting and Programming -- Proving and Disproving Termination of Higher-Order Functions -- Proving Liveness with Fairness Using Rewriting -- A Concurrent Lambda Calculus with Futures -- Compositional System Design and Refinement -- The ASM Method for System Design and Analysis. A Tutorial Introduction -- Logical Problem Analysis and Encoding II -- Matching Classifications via a Bidirectional Integration of SAT and Linguistic Resources -- Theorem Proving Frameworks and Systems -- Connecting a Logical Framework to a First-Order Logic Prover -- Combination of Isabelle/HOL with Automatic Tools -- ATS: A Language That Combines Programming with Theorem Proving.

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## Sommario/riassunto

This volume contains the proceedings of the 5th International Workshop on Frontiers of Combining Systems (FroCoS 2005) held September 19-21, 2005 in Vienna, Austria. Previously, FroCoS was organized in Munich (1996), Amsterdam (1998), Nancy (2000) and Santa Margherita Ligure near Genoa (2002). In 2004, FroCoS joined IJCAR 2004, the 2nd International Joint Conference on Automated Reasoning. Like its predecessors, FroCoS 2005 offered a common forum for the presentation and discussion of research results and activities on the combination, integration, analysis, modularization and interaction of formally defined systems, with an emphasis on logic-based ones. These issues are important in many areas of computer science, such as logic, computation, program development and verification, artificial intelligence, automated reasoning, constraint solving, declarative programming, and symbolic computation. There were 28 research papers submitted to FroCoS 2005, authored by researchers from 16 countries. After extensive reviewing and discussion within the Program Committee, 14 papers including two system descriptions were finally accepted for presentation at the conference and publication in this volume. The topics covered by the selected papers include: combinations of logics, theories, and decision procedures; constraint solving and programming; combination issues in rewriting and programming as well as in logical frameworks and theorem proving systems. In addition to the regular accepted papers, this volume also contains papers (three full ones and one abstract) corresponding to four invited talks given by Luca de Alfaro (Univ.

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