

# Lecture Notes in Artificial Intelligence

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Edited by J. G. Carbonell and J. Siekmann

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# Automated Deduction – CADE-15

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on Automated Deduction  
Lindau, Germany, July 5-10, 1998  
Proceedings



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# Preface

The CADE conferences are the major forum for the presentation of new research in all aspects of automated deduction. This volume contains the papers and system descriptions selected for presentation at the 15th International Conference on Automated Deduction CADE-15, held July 5-10, 1998, in Lindau (Germany).

Eighty-five research papers and twenty-five system descriptions were submitted by researchers from eighteen countries. Each submission was reviewed by at least three program committee members with the help of 129 subreferees. An electronic discussion through the World Wide Web allowed us to prepare the Program Committee meeting, which took place in Nancy (France) on March 14. We accepted twenty-four research papers and ten system descriptions for presentation at the conference.

The papers cover a wide range of topics on theorem proving based on resolution, superposition, model generation and elimination, or connection tableau calculus, in first-order, higher-order, intuitionistic, or modal logics, and describe applications to geometry theorem proving, computer algebra, or reactive systems. System descriptions address the implementation of various techniques such as constraint solving, decision procedures, proof planning, induction, model checking, and cooperation.

The program also included three invited lectures: "Reasoning About Deductions in Linear Logic" by Frank Pfenning, "ACL2 Support for Verification Projects" by Matt Kaufmann, and "Deductive vs. Model-Theoretic Approaches to Formal Verification" by Amir Pnueli. Abstracts or full papers of these lectures are also included in this volume.

Not covered in these proceedings are several other CADE-15 events. Four tutorials and nine workshops were offered to participants prior to the conference. The third automated theorem-proving system competition CASC-15 was organized by Christian Suttner and Geoff Sutcliffe. Immediately following the conference, the final meeting of the National Schwerpunkt Deduktion project, organized by Wolfgang Bibel, was open to all participants.

We would like to express our gratitude to Wolfgang Bibel and his Organizing Committee at Darmstadt University for their great organization of this fifteenth CADE, taking care of many different tasks including publicity for the Conference, raising outside funding, and local arrangements.

We would like also to thank the members of the Program Committee and all the referees for their care and time in reviewing and selecting the submitted papers. Finally, special thanks go to Horatiu Cirstea for his continuous help in maintaining the Web server of the program committee and facilitating our task in preparing the conference.

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