Foreword

This volume contains the papers presented at the CADE-19 workshop Model Computation – Principles, Algorithms, Applications on July 29, 2003, in Miami, Florida, USA. The contributions by Ulrich Furbach and Ilkka Niemelä correspond to invited talks. Eight more papers have been selected from a slightly larger number of submissions to the workshop.

Model Computation — also known as (Automated) Model Building — extends and complements automated proof search. Ideally, any theorem prover that terminates without finding a refutation (proof) should be able to output information on (counter)models. But the use of models goes beyond the enhancement of classical theorem provers. The corresponding range of research topics and applications is rather large. This fact is well reflected by the contributions collected here. On the one hand, there are papers describing the latest developments in finite model finding; on the other hand, the generation of Herbrand models, but also the use of models in human-oriented proof search are addressed. Although classical first order logic is in the focus of most contributions, propositional techniques, and even modal logics are investigated as well. Some papers directly refer the practice of automated theorem proving, while others stress links to programming paradigms or other foundational issues.

Like for the CADE-17 workshop with same title, and an earlier related workshop at CADE-12, we could experience ongoing and lively interest in Model Computation while organizing this year’s workshop. We hope that also this event serves the purpose of bringing together researchers with the aim to get new insights by mutually learning from the various aspects of model computation, to identify important problems and new developments in model computation, and to stimulate further research in this area.

We wish to thank the organisation team of CADE-19, but also all workshop participants, in particular our two invited speakers.

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