

SC² 2016

**First Workshop on
Satisfiability Checking and Symbolic Computation
FETOPEN-CSA SC² Workshop 1**

Bridging Two Communities to Solve Real Problems

September 24, 2016

Affiliated with the 18th International Symposium on Symbolic and
Numeric Algorithms for Scientific Computing (SYNASC 2016)

Timisoara, Romania

<http://www.sc-square.org/CSA/workshop1.html>

Preface

This volume contains the papers presented at the First Workshop on Satisfiability Checking and Symbolic Computation (SC² 2016). The workshop was held on September 24, 2016, in Timisoara, Romania, in association with the 18th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2016).

Symbolic Computation is concerned with the algorithmic determination of exact solutions to complex mathematical problems; more recent developments in the area of Satisfiability Checking are starting to tackle similar problems but with different algorithmic and technological solutions. The two communities share many central interests, but researchers from these two communities rarely interact. Also, the lack of common or compatible tool interfaces is an obstacle to their fruitful combination. Bridges between the communities in the form of common platforms and road-maps are necessary to initiate an exchange, and to support and direct their interaction. The aim of this workshop, along the SC-square H2020 FETOPEN Coordination and Support Activity project (712689), was to provide a time to discuss, share knowledge and experience across both communities.

The workshop was open for submission and participation to everyone interested in the topics, whether they were members or associates of the SC-square H2020 FETOPEN CSA project or not.

Papers were solicited on topics that include all aspects involving Satisfiability Checking and Symbolic Computation together. More specifically, some suggested topics were:

- Decision procedures and their embedding into SMT solvers and computer algebra systems
- Satisfiability Checking for Symbolic Computation
- Symbolic Computation for Satisfiability Checking
- Applications relying on both Symbolic Computation and Satisfiability Checking
- Combination of Symbolic Computation and Satisfiability Checking tools

The workshop received ten submissions. Each submission was reviewed by at least three program committee members, and nine papers were accepted for presentation at the workshop and inclusion in the informal proceedings. Seven papers are included in these CEUR proceedings, according to the wishes of the authors. The workshop had an invited talk, by Christopher W. Brown (United States Naval Academy, USA) on the topic “Real polynomial constraints: satisfiability checking brings a new perspective to symbolic computing”.

The workshop organizers would like to thank the authors and participants of the workshop for helping making this a successful event. Our particular thanks go to the program committee and the external reviewers for their reviewing work. We are also grateful to the SYNASC organizers for their support and for hosting the workshop, and are indebted to the EasyChair team for the availability of the EasyChair Conference System. The proceedings are published under CEUR, and we would like to warmly thank all the people and institutions that make CEUR proceedings possible.

September 2016

Erika Ábrahám and Pascal Fontaine (Workshop Chairs)
James H. Davenport (SC² H2020 FETOPEN CSA Coordinator, project 712689)

Program Committee

John Abbott (Universität Kassel, Germany)
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Martin Bromberger (Max-Planck-Institut für Informatik, Saarbrücken, Germany)
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Karsten Scheibler (Albert-Ludwigs-Universität, Freiburg, Germany)

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