

Satisfiability Modulo Theories —  
18th International Workshop,  
SMT 2020

Online (initially located in Paris, France)  
July 5–6, 2020

Proceedings

Edited by François Bobot and Tjark Weber

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## Preface

SMT 2020, the 18th International Workshop on Satisfiability Modulo Theories, was held as a satellite event of IJCAR 2020 and FSCD 2020 on July 5–6, 2020. The workshop was originally scheduled to take place in Paris, France, but was eventually held online as a virtual meeting because of the COVID-19 pandemic.

For background on Satisfiability Modulo Theories and the SMT workshop series, we quote the following description from its website:<sup>1</sup>

Determining the satisfiability of first-order formulas modulo background theories, known as the Satisfiability Modulo Theories (SMT) problem, has proved to be an enabling technology for verification, synthesis, test generation, compiler optimization, scheduling, and other areas. The success of SMT techniques depends on the development of both domain-specific decision procedures for each background theory (e.g., linear arithmetic, the theory of arrays, or the theory of bit-vectors) and combination methods that allow one to obtain more versatile SMT tools, usually leveraging Boolean satisfiability (SAT) solvers. These ingredients together make SMT techniques well-suited for use in larger automated reasoning and verification efforts.

The aim of the SMT Workshop is to bring together researchers and users of SMT tools and techniques. Relevant topics include but are not limited to:

- Decision procedures and theories of interest
- Combinations of decision procedures
- Novel implementation techniques
- Benchmarks and evaluation methodologies
- Applications and case studies
- Theoretical results

Papers on pragmatic aspects of implementing and using SMT tools, as well as novel applications of SMT, are especially encouraged.

SMT 2020 featured invited talks by Philipp Rümmer and Mooly Sagiv, a joint session with the 5th International Workshop on Satisfiability Checking and Symbolic Computation (SC<sup>2</sup> 2020), and presentations of nine peer-reviewed papers. Of these, five papers are published in this volume, two as regular papers and three as short papers. The other four papers were submitted to the workshop for presentation only; we are only including their abstracts.

We would like to thank the SMT Steering Committee, the IJCAR/FSCD organisers, the SMT Program Committee, the authors and speakers, and everyone else who, by supporting and adapting to the online format of the event, contributed to the workshop’s success in the midst of a global pandemic.

François Bobot and Tjark Weber  
Co-chairs, SMT 2020

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<sup>1</sup><https://smt-workshop.cs.uiowa.edu/2020/>

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