

Foreword

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The Applications of Computer Algebra (ACA) conference series¹ is devoted to promoting all kinds of computer algebra applications, and encouraging the interaction of developers of computer algebra systems and packages with researchers and users (including scientists, engineers, educators, and mathematicians). Topics include, but are not limited to, computer algebra in the sciences, engineering, communication, medicine, pure and applied mathematics, education and computer science.

The twenty-second conference in the series, ACA 2016², was held at Kassel University in Germany, August 1st–4th, 2016. Wolfram Koepf and Werner Seiler served as General Chairs of ACA 2016, while Georg Regensburger, Winfried Neun and Michael Wester served as Program Chairs. The conference featured 3 invited speakers:

- David Jeffrey (Western University, Canada), who spoke on: “Computer Algebra Systems and the Lambert W Function”
- Pedro Real (University of Seville, Spain) who spoke on: “Exploring a Homotopy Approach to the Science of Data: Huge Scenarios, Topological Scintigraphy and Flagellate Structures”

¹ <http://math.unm.edu/aca.html>.

² <https://www.mathematik.uni-kassel.de/ACA2016/>.

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- Thomas Sturm (LORIA Nancy, France) who spoke on: “Real Problems over the Reals: From Complete Elimination Procedures to Subtropical Decisions”

ACA 2016 has received a grant by Deutsche Forschungsgemeinschaft (DFG).³ The conference was also sponsored by Additive⁴ and Maplesoft.⁵ There was also a featured presentation by Jürgen Gerhard (Maplesoft), titled “What’s New in Maple 2016” and a featured talk about Mathematica from Additive.

The conference was structured as a series of special sessions:

- Computer Algebra for Modeling in Science and Engineering
- Computer Algebra in Education
- Human-Computer Algebra Interaction
- Applied and Computational Algebraic Topology
- Difference Computer Algebra and its Applications
- Computer Algebra for Dynamical Systems and Celestial Mechanics
- Information Services for Mathematical Software, Models, and Research Data
- Algebraic and Algorithmic Aspects of Differential and Integral Operator Session
- Automated Theorem Proving in Dynamic Geometry: Current Achievements
- Computer Algebra in Coding Theory and Cryptography
- SC-Square: Symbolic Computation and Satisfiability Checking
- General session
- Poster session

The conference book of abstracts was published on-line as a 283-page .pdf file and is accessible on the conference webpage.

This special issue of Mathematics in Computer Science (MCS) contains 21 formally refereed articles accepted from 29 submissions of full papers presented (or related to presentations) at ACA 2016.

We wish to express our sincere thanks to the anonymous referees who provided constructive and detailed referee reports that helped the authors of accepted papers to improve the papers substantially. Without their hard work it would not have been possible to produce the current MCS special issue.

³ <http://www.dfg.de>.

⁴ <http://software.additive-net.de/en/>.

⁵ <http://www.maplesoft.com/>.