Foreword

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The International Workshop on Computer Algebra in Scientific Computing (CASC) is an annual meeting on computer algebra systems, the underlying algorithms for symbolic computation, and the role of both within scientific computing and its applications. CASC maintains a web presence at the location below.

www.casc-conference.org

In 2022, the 24th CASC conference was held in Gebze, Kocaeli, Turkey at the Gebze Technical University. Due to the ongoing COVID-19 pandemic it was held as a hybrid conference, with most participants attending in-person and those who could not joining online. We were grateful to the commitment of the organisers and participants that allowed CASC 2022 to go ahead successfully. This special issue contains selected work that was presented at this event.

Scope of CASC

1. The theory of symbolic computation and its implementation in computer algebra systems. This includes, but is not limited to:

   - new methods for exact computation;

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- symbolic algorithms and their complexity;
- automated reasoning in algebra and geometry;
- parallel symbolic computation;
- symbolic methods for differential, differential-algebraic, and difference equations;
- symbolic methods for polynomial equations and inequalities;
- embedding of computer algebra within different software and hardware environments.

2. All other areas of scientific computing in regards to their benefit from or use of computer algebra methods and software. This includes, but is not limited to:

- the use of computer algebra in approximate computation;
- computer algebra methods in big data analytics;
- computer algebra methods for simulation and modelling.

3. Applications of the above throughout the natural sciences and engineering.

Publication at CASC

CASC has a long history of publishing conference proceedings as volumes of Springer's Lecture Notes in Computer Science (LNCS). The proceedings from CASC 2022 were recently published as volume 13366. Over the past two decades, CASC has evolved considerably, and both organisers and participants have desired additional forms of publication with respect to more extensive research that has reached some level of completion. Since CASC 2019 authors can choose in advance of the conference to either:

1. submit a paper for the LNCS proceedings; or
2. submit a shorter extended abstract which would be distributed only at the conference.

There are three audiences for the second option:

- those who wish to talk on previously published work;
- those whose work is not yet ready for publication, but wish to receive feedback on their work in progress;
- those who plan to submit a journal paper on the work shortly.

This special issue was organised as a publication option for the third group.

There were eight submissions made to the issue. All papers received at least three expert reviews and we decided to accept six of them, with most accepted only after a second revision stage to address reviewers' comments.