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High Performance Computing in Science and Engineering

Third International Conference, HPCSE 2017
Karolinka, Czech Republic, May 22–25, 2017
Revised Selected Papers

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Preface

This volume comprises the proceedings of the Third International Conference on High Performance Computing in Science and Engineering – HPCSE 2017, which was held in the hotel Soláň in the heart of the Beskydy Mountains, Czech Republic, during May 22–25, 2017. The biennial conference was organized by IT4Innovations National Supercomputing Center at VSB - Technical University of Ostrava, and its goal was to bring together specialists in applied mathematics, numerical methods, and parallel computing, to exchange experience, and to initiate new research collaborations. We are glad that our invitation was accepted by distinguished experts from world-leading research institutions.

This conference has become an international forum for exchanging ideas among researchers involved in scientific and parallel computing, including theory and applications, as well as applied and computational mathematics. The focus of HPCSE 2017 was on models, algorithms, and software tools that facilitate efficient and convenient utilization of modern parallel and distributed computing architectures, as well as on large-scale applications.

The scientific committee of HPCSE 2017 comprised Radim Blaheta, Zdeněk Dostál, Tomáš Kozubek, Josef Málek, Zdeněk Strakoš, Jakub Šístek, Miroslav Tůma, and Vít Vondrák.

The plenary talks were presented by:

- Erin Claire Carson from New York University (USA)
- Froilan Dopico from Universidad Carlos III de Madrid (Spain)
- Pavel Jiránek from Siemens Industry Software NV, Leuven (Belgium)
- Luca Frediani from the University of Tromsø (Norway)
- Daniel Loghin from the University of Birmingham (UK)
- Dalibor Lukáš from VŠB - Technical University of Ostrava (Czech Republic)
- Kent-Andre Mardal from the University of Oslo (Norway)
- Catherine Powell from the University of Manchester (UK)
- Stefan Ratschan from the Institute of Computer Science, AS CR, Prague (Czech Republic)
- Yousef Saad from the University of Minnesota, Minneapolis (USA)
- Olaf Schenk from Università della Svizzera italiana, Lugano (Switzerland)
- Radek Tezaur from Stanford University (USA)
- Sivan Toledo from Tel Aviv University (Israel)
- Gerardo Toraldo from Università degli Studi di Napoli Federico II (Italy)
- Ludmil Zikatanov from The Pennsylvania State University, State College (USA)

The conference was supported by The Ministry of Education, Youth and Sports from the National Programme of Sustainability (NPU II) project “IT4Innovations excellence in science - LQ1602.” We gratefully acknowledge this support.

The HPCSE 2017 conference was a fruitful event, providing interesting lectures, showcasing new ideas, demonstrating the beauty of applied mathematics, presenting numerical linear algebra, optimization methods, and high performance computing, and starting or strengthening collaborations and friendships.

This meeting attracted more than 100 participants from 10 countries. All participants were invited to submit an original paper to this book of proceedings. We give thanks for all contributions as well as for the work of the reviewers, and hope that this volume will be useful for readers. The proceedings were edited by Tomáš Kozubek, Martin Čermák, Petr Tichý, Radim Blaheta, Jakub Šístek, Dalibor Lukáš, and Jiří Jaroš.

Finally, we would like to cordially invite readers to participate in the next HPCSE conference, which is planned to be held at the same place during May 20–23, 2019.

June 2018

Tomáš Kozubek

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