EDITORIAL

Preface

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ESCO 2012 was the 3rd event in a successful series of interdisciplinary meetings dedicated to modern methods and practices of scientific computing. It was held on June 25–29, 2012 in Pilsen, Czech Republic.

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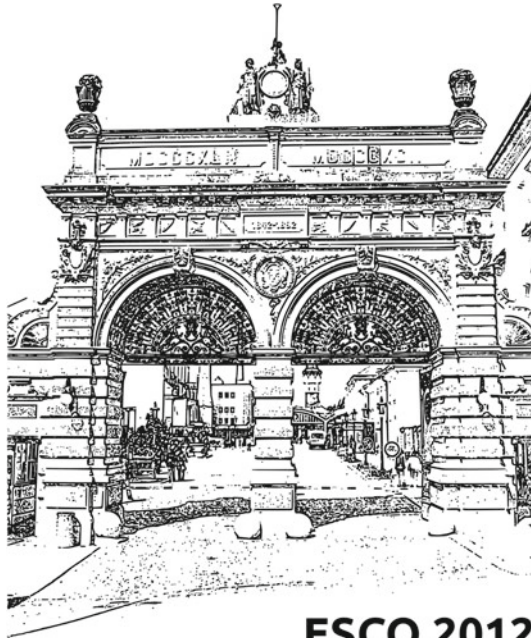
ESCO 2012
Pilsen, Czech Republic, June 25 - 29, 2012

Main thematic areas of the conference included:

- Multiphysics coupled problems,
- Higher-order computational methods,
- Computing with Python,
- GPU computing,
- and Cloud computing.

The meeting was organized jointly by the University of Nevada (Reno, USA), Institute of Thermomechanics (Prague, Czech Republic), Darmstadt University of Technology (Darmstadt, Germany), University of West Bohemia (Pilsen, Czech Republic), Czech Technical University (Prague, Czech Republic), and FEMhub Inc. (Reno, USA).

ESCO 2012 was successful in achieving its goal to bring together leading applied mathematicians and engineers working in the area of coupled problems, identify emerging research directions, and establish new collaborations. The main topics of the meeting included the following application areas: Computational electromagnetics, Civil engineering, Nuclear engineering, Mechanical engineering, Nonlinear dynamics, Fluid dynamics, Climate and weather modeling, Computational ecology, Wave propagation, Acoustics, Geophysics, Geomechanics and rock mechanics, Hydrology, Subsurface modeling, Biomechanics, Bioinformatics, Computational chemistry, Stochastic differential equations, Uncertainty quantification, and others.

The meeting was attended by around 150 computational science researchers from the US, Europe, Asia, Australia and South Africa. Among keynote invited speakers were John Butcher (Auckland University, New Zealand), Michael Gee (Technical University of Munich, Germany), Christopher Baker (Sandia National Laboratory,

USA), Lois Curfman McInnes (Argonne National Laboratory, USA), and Stan Posey (NVIDIA, USA).

Scientific committee of ESCO 2012 included Valmor de Almeida (Oak Ridge National Laboratory, Oak Ridge, USA), Zdenek Bittnar (Faculty of Civil Engineering, CTU Prague), Alain Bossavit (Laboratoire de Genie Electrique de Paris, France), John Butcher (Auckland University, New Zealand), Antonio DiCarlo (University Roma Tre, Rome, Italy), Ivo Dolezel (Czech Technical University, Prague, Czech Republic), Stefano Giani (University of Nottingham, UK), Pavel Karban (University of West Bohemia, Pilsen, Czech Republic), Darko Koracin (Desert Research Institute, Reno, USA), Dmitri Kuzmin (University of Erlangen-Nuremberg, Germany), Stephane Lanteri (INRIA, Sophia-Antipolis, France), Jichun Li (University of Nevada, Las Vegas, USA), Shengtai Li (Los Alamos National Laboratory, Los Alamos, USA), Alberto Paoluzzi (University Roma Tre, Rome, Italy), Francesca Rapetti (University of Nice, France), and Stefan Turek (Technical University of Dortmund, Germany).

All papers for this special issue went through standard Springer journal review process to ensure its high scientific quality. The next ESCO will take place in Pilsen, Czech Republic, in June 2014. This special issue was edited jointly by: Pavel Solin, Pavel Karban, Sascha Schnepp, Jaroslav Kruis. For more information on ESCO 2012 search for "ESCO 2012".