EDITORIAL

Recent trends in Advanced Computational Methods in Engineering (ACOMEN)

The sixth edition of the international conference on "Advanced COmputational Methods in ENgineering" welcomed over hundred participants from 29 countries in Ghent (Belgium), 24–27 June 2014. Like the previous editions the conference themes are concentrated on mathematical modeling, simulation and numerical methods for solving scientific problems from various engineering disciplines. The organizers would like to thank all of the participants because they turn every ACOMEN into an interesting, learning-full and pleasant event.

Each conference day two high-standing invited lectures were given by world-wide recognized experts in their respective fields of research:

- Gregoire Allaire (Centre de Mathématiques Appliquées, Ecole Polytechnique, France) *Recent advances in the level set method for shape and topology optimization of structures*;
- Larisa Beilina (Department of Mathematical Sciences, Chalmers University of Technology and Göteborgs universitet, Sweden) *Two-stage numerical procedure for the solution of hyperbolic coefficient inverse problem*;
- Kai-Uwe Bletzinger (Lehrstuhl für Statik, Technische Universität München, Germany) *Creating optimal form by vertex morphing and sensitivity filtering*;
- Oscar P. Bruno (Computing and Mathematical Sciences, California Institute of Technology, USA) *Fast spectral PDE solvers for general structures*;
- Axel Klawonn (Mathematisches Institut,Universität zu Köln, Germany) *Domain decomposition methods - Towards extreme scalability using new nonlinear approaches and enhanced robustness using adaptive coarse spaces*;
- Youssef Marzouk (Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, USA) *Approximating the Bayesian solution of inverse problems*;
- Andrew Stuart (Mathematics Institute, The University of Warwick, UK) *Computational Bayesian inversion*;
- Enrique Zuazua (Ikerbasque & BCAM, Basque Center for Applied Mathematics, Spain) *Numerics for large-time horizon control of scalar conservation laws*.

The format of ACOMEN consisted of topic dedicated mini symposia: Simulation of multiphase flow and reactive transport in porous media, organized by Florian Adrian Radu (Department of Mathematics, University of Bergen, Norway); Biological applications and numerical aspects of reaction-diffusion-convection systems on evolving surfaces,

organized by Andriy Sokolov (Institute for Applied Mathematics, TU Dortmund, Germany); Uncertainty Quantification, organized by Stéphane Clenet (L2EP/Arts et Métiers ParisTech centre Lille, France); Numerical modeling and simulation of electrochemical devices, organized by Jürgen Fuhrmann (Weierstrass Institute, Germany); Computational methods for nano-photonics, organized by Stéphane Lanteri (INRIA, NACHOS project-team, France); Computational methods in nuclear engineering, organized by Gert Van den Eynde (Nuclear Systems Physics, Belgian Nuclear Research Centre, SCK•CEN, Belgium); Numerical methods for solving differential equations, organized by Marnix Van Daele (Department of Applied Mathematics, Computer Science and Statistics, Ghent University, Belgium); Computational Methods in Chemical Engineering, organized by Denis Constales (Department of Mathematical Analysis, Ghent University, Belgium); Isogeometric Analysis in Continuum Mechanics and Electromagnetism, organized by Stefan Kurz (Electromagnetics, Tampere University of Technology, Finland); Application of Calderon identities in electromagnetic field simulations, organized by Hendrik Rogier (Department of Information Technology, Ghent University, Belgium) and Tim Boonen (Agilent Technologies Belgium N.V., Belgium); Domain decomposition and FEM mesh generation, organized by Herbert De Gersem (Wave Propagation and Signal Processing Research Group, KU Leuven - Kulak, Belgium).

We also thank the session chairs of the open symposia: Markus Bause (Helmut Schmidt University, University of the Federal Armed Forces Hamburg, Germany), Jens Förstner (University of Paderborn, Germany), Sebastian Schöps (TU Darmstadt, Germany), Erik Dick (Ghent University, Belgium) and Jan Vierendeels (Ghent University, Belgium).

We have the pleasure to present some of these exposed contributions as a full manuscript in this special issue of Journal CAM. We are ELSEVIER very grateful, and in particular our Belgian colleague L. Wuytack, editor-in-chief of Journal CAM, for giving us the opportunity to dedicate the special issue in hand to ACOMEN 2014.

Finally, special thanks goes to the organizational team of this years edition, all technical staff working behind the scenes, and all the authors and referees for their excellent contributions.

We hope to see you back in Ghent at ACOMEN 2017 (more info: `www.acomen.ugent.be`)!

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