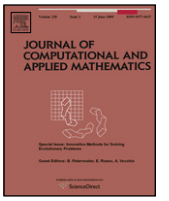
Journal of Computational and Applied Mathematics 234 (2010) 2027–2028

Contents lists available at ScienceDirect

Journal of Computational and Applied Mathematics

journal homepage: www.elsevier.com/locate/cam



Preface

The fourth International Conference on Advanced COmputational Methods in ENgineering (ACOMEN 2008) was held at Liège University (Belgium), 26–28 May 2008, under the Patronage of Liège, Louvain la Neuve & Ghent Universities.

Like the former three editions of the ACOMEN conferences, held at Ghent University in 1998 and 2005 and at Liège University in 2002, the conference themes were concentrated on mathematical modeling, simulation and numerical methods for solving scientific problems from various engineering disciplines.

Over 160 participants, a large majority of them having presented a paper, demonstrated the continuously increasing importance of engineering research fields linked to mathematical modeling and computational techniques. We would like to thank all of them for their contribution and presence, which has made the conference an interesting and pleasant event.

Another important factor of the succes of ACOMEN 2008 consisted of the highstanding invited plenary lectures given by C. Farhat from the Department of Mechanical Engineering at Stanford School of Engineering, USA (Recent advances in high-fidelity and reduced-order modeling of a class of multidisciplinary flow problems: Towards near real time computational mechanics), by D. Constales from the Department of Mathematical Analysis at Ghent University, Belgium (Mathematics in Chemical Kinetics and Engineering: Model and Software for Temporal Analysis of Products), by M. Geers from the Department of Mechanical Engineering, Materials Technology at TU Eindhoven, The Netherlands (Multi-scale computational homogenization: trends & challenges), by R. Radovitzky from the Department of Aeronautics and Astronautics at MIT, USA (Computational and analytical modeling of blast effects on structures and humans), by S. Sherwin from the Department of Aeronautics at Imperial College, UK (Multi-scale modelling of flow in the Cardiovascular system), by F. Thouverez from MSGMGC Vibrations at Ecole Centrale Lyon, France (Nonlinear Dynamics of Turbomachines) and by X. Antoine from the Institut Élie Cartan de Nancy at Institut National Polytechnique de Lorraine, France (Analytical preconditioning techniques: the case of integral operators in scattering). These invited speakers are world-wide recognized experts in their respective research fields and we want to thank them for their contribution and dedication.

A special feature of ACOMEN 2008 was the organization of dedicated mini-symposia

1. Biomedical Engineering & Biomechanics, organized by Serge Cescotto (ULg), Patrick Segers (UGent) and Jean-Philippe Ponthot (ULg)
2. Electromagnetism, organized by Christophe Geuzaine (ULg) and Luc Dupré (UGent)
3. Fluid Mechamics, organized by Jean-François Remacle (UCL), Jan Vierendeels (UGent) and Geoffrey Deliège (ULg)
4. Micro & Nano Mechanics, organized by Laurent Stainier (ULg) and Frédéric Lani (Cenaero)
5. Optimization & Applied Mathematics, organized by Pierre Duysinx (ULg), Benny Malengier (UGent), Marián Slodička (UGent) and Vincent Kelner (ULg)
6. Solid Mechanics & Dynamics, organized by Gaëtan Kerschen (ULg), Olivier Bruls (ULg), Hervé Degée (ULg) and Jean-Claude Golinval (ULg)
7. Thermo-Mechanics & CFD-Based Multiphysics, organized by Philippe Geuzaine (Cenaero), Erik Dick (UGent) and Michel Hogge (ULg).

These organizers were also acting as chairmen of their respective symposia. We gratefully acknowledge their efforts.

Needless to say, such a meeting requires numerous administrative tasks and we want to thank Mrs. M. Bruno, J. Lejeune and C. Reynders all from ULg for their valuable efforts.

In addition, we would like to thank the Liège University for its hospitality at the Academic Room and at the Faculty of Philosophy and Letters. Furthermore, L. Stainier and J.-P. Ponthot from ULg and J.F. Remacle from UCL, belonging to the local organizing committee, are gratefully acknowledged for their considerable contributions to the success of the conference. This success encourages us to organize a next meeting in 2011 at Ghent University.

This special issue of JCAM contains a number of selected papers, all of which were presented at ACOMEN 2008. All papers were written in order to fit the aims and scopes of the journal. Moreover, they have been doubly refereed, a task for which

0377-0427/$ – see front matter
doi:10.1016/j.cam.2009.08.095

we are deeply indebted to a large number of referees. Their valuable suggestions led to an improvement of the global quality of this volume, both in content and in presentation.

In addition, we thank Ms. Geetha Lakshmi of Elsevier B.V. and his staff for the technical support. Last but not least we want to express our thanks to our Belgian colleague L. Wuytack, editor-in-chief of JCAM, for giving us the opportunity to dedicate a special issue to ACOMEN 2008.

See you in Ghent at ACOMEN 2011,

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