Preface

Special Issue for Waves 2009

This special issue gathers selected extended papers following the ninth International Conference on Mathematical and Numerical Aspects of Waves Propagation (Waves 2009). It was held in Pau, France, during the week June 15–19 2009 and was jointly organized by the two INRIA project-teams MAGIQUE 3D and POEMS. The Waves conferences are usually held every two years (Strasbourg, France, 1991; Newark, Delaware, USA, 1993; Mandelieu- La Napoule, France; 1995, Golden, USA, 1998; Santiago de Compostella, Spain, 2000; Jyväskylä, Finland, 2003; Brown, USA, 2005; Reading, Great-Britain, 2007).

Waves 2009, as the eight previous Waves conferences, was a great opportunity to discover significant advances in the analysis and computational modeling of wave phenomena. Exciting new applications have also been discussed and we hope it has stimulated future research. The major themes of the conference included forward and inverse scattering, nonlinear wave phenomena, fast computational techniques, high performance computing, numerical analysis, absorbing layers and approximate boundary conditions, analytic and semi-analytic techniques for wave problems, domain decomposition, guided waves, random media, etc...

The number of registered participants and of presented talks is increasing from one Waves conference to another. During this edition, we welcomed 250 participants from about 30 different countries and 180 talks have been presented. This increase reflects the

growing interest of the scientific community in the theoretical analysis and the numerical simulation of wave phenomena. It also justifies the edition of this special issue. After the conference, 39 papers have been submitted for publication in this volume. Among them, 26 have been accepted after a rigorous peer-review process to ensure that the quality of papers meets the standards of Communications in Computational Physics. We would like to take this opportunity to thank all the referees for their diligent work and whole-hearted support. The success of the meeting was ensured through the generous financial contribution of industrial partners (TOTAL, CEA, EDF and EADS), local and regional au-thorithies (Conseil Général des Pyrénés Atlantiques, Communauté d'Agglomération de Pau, Conseil Régional d'Aquitaine, Mairie de Pau) and academical partners (INRIA, Uni-versité de Pau et des Pays de l'Adour, CNRS). We also wish to thank the tourism office of Pau and the Palais Beaumont for their help during the organization of the conference.

<div align="right">

Julien Diaz (INRIA-University of Pau)

Helene Barucq (INRIA-University of Pau)

Anne Sophie Bonnet Ben Dhia (CNRS-ENSTA)

Gary Cohen (INRIA)

Patrick Joly (INRIA)

Jeronimo Rodriguez (University of Santiago de Compostela)

</div>