

## Foreword

The 2008 edition of the National Congress of Numerical Analysis (CANUM), the annual scientific event of the French Society for Industrial and Applied Mathematics (SMAI), held in Saint Jean de Monts, May 25-30, 2008. The meeting has been organized jointly by SMAI and the applied mathematicians of the Universities of Amiens, Calais, Lille, Paris 13 and Valenciennes, the Organizing committee being composed by E. Audusse, Ch. Besse, J.-F. Coulombel, L. Dupaigne, O. Goubet, Th. Goudon, L. Halpern, P. Lafitte, B. Merlet, S. Nicaise, C. Picard and H. Sadok. However, this list is definitely too short to reflect correctly the strong commitment of the whole teams of the partner departments. The organization acknowledges support from a “Plan Pluri-Annuel de Formation” of the Fédération de Recherche Mathématique du Nord Pas de Calais, FR 2956 of CNRS, as well as a specific funding from the math. laboratories of Amiens, Calais, Lille, Paris 13 and Valenciennes, CNRS, the Ministry of Research, INRIA, the Atomic Energy Commission, and the companies IFP, Michelin, DGA, EADS, EDP Sciences, Birkhauser, Dunod, Bedi, and Conseil Régional de Picardie. The Organizing committee also wishes to acknowledge the constant assistance of the Inria Lille Nord Europe Research Center, which in particular has managed the computer and communication facilities during the meeting.

The Scientific Committee of the Congress was composed by ten members, namely: M. Asch (Amiens), N. Ben Abdallah (Toulouse), E. Bonnetier (Grenoble), A. de Bouard (CNRS, Ecole Polytechnique), M. Bossy (INRIA), Th. Colin (Bordeaux), V. Giovangigli (CNRS, Ecole Polytechnique), Th. Goudon (INRIA, chair), L. Halpern (Paris 13) et R. Herbin (Aix-Marseille). It has invited for plenary lectures A. Aftalion (Paris 6), F. Clément (INRIA), C. Conca (Santiago, Chili), M. Gander (Genève, Switzerland), J. Garnier (Paris 7 & Stanford, USA), B. Maury (Paris 11), G. Métivier (Bordeaux), E. Sonnendruker (Strasbourg). Another plenary lecture has been given by A. Lefebvre (Paris 11), 2008 Gamni award. Finally, a series of focused symposia has been organized: Mathematical models in biology and medicine (Scientific Committee), A posteriori estimators and finite element methods (P. Hild, Besançon), Simulations of hydrodynamic waves (J.-P. Chehab, Amiens), Hybrid models (M. Deaconu and T. Lelièvre, INRIA), Plasmas physics (M.-H. Vignal, Toulouse), Elasticity and dislocations (R. Monneau, ENPC).

For this volume, we have invited the plenary speakers as well as the organizers of symposia to submit an original article or a review on their favorite topics. Furthermore, the winners of the best-poster-awards — F. Cadoux (INRIA), A. Claysse (Paris 6), S. Delcourte (INRIA), A. Grigoriu (Paris 9 & INRIA), J. Lasry (Toulouse), L. Martin (Dassault & Toulouse), L. Métivier (Paris 13) and S. Minjeaud (Aix-Marseille) — funded by Birkhauser, SMAI, Dunod and EDP Sciences, have been encouraged to submit a contribution too. This is the opportunity to relay here the overall impression of great quality of the contributions of the junior researchers attending the meeting, both for the scientific contents and for the presentation, always professionally prepared.

Eventually, we express our warmest thanks to the editorial board, and especially to J.-F. Gerbeau for accepting the publication of this volume in ESAIM-Proc.

The editors: C. Besse, T. Goudon, O. Goubet and S. Nicaise.