

Preface

The International Conference on Numerical Methods and Applications is a traditional forum for scientists from all over the world providing an opportunity to share ideas and establish fruitful scientific cooperation. The aim of the conference is to bring together leading international scientists of the numerical and applied mathematics community and to attract original research papers of very high quality. The papers in this volume were presented at the eighth edition of the International Conference on Numerical Methods and Applications (NMA 2014) held in Borovets, Bulgaria, during August 20–24, 2014. The conference was organized by the Institute of Information and Communication Technologies at Bulgarian Academy of Sciences. The Institute of Mathematics and Informatics at Bulgarian Academy of Sciences and Faculty of Mathematics and Informatics at St. Kliment Ohridski University of Sofia were co-organizers of this traditional scientific meeting. Over 100 participants from 22 countries attended the conference. Seventy-six talks, including five invited and keynote talks, were presented. This volume contains 34 selected papers. During NMA 2014, a wide range of problems concerning recent theoretical achievements in numerical methods and their applications in mathematical modeling were discussed. Specific topics of interest were the following: Numerical methods for differential and integral equations; approximation techniques in numerical analysis; numerical linear algebra; hierarchical and domain decomposition methods; parallel algorithms; Monte Carlo methods; computational mechanics; computational physics, chemistry, and biology; engineering applications. Six special sessions were organized namely: Monte Carlo and Quasi-Monte Carlo Methods; Metaheuristics for Optimization Problems; Advanced Numerical Methods for Scientific Computing; Advanced Numerical Techniques for PDEs and Applications; Solving Large Engineering and Scientific Problems with Advanced Mathematical Models; Numerical Simulations and Back Analysis in Civil and Mechanical Engineering.

The success of the conference and the present volume are due to the joint efforts of many colleagues from various institutions and organizations. We express our deep gratitude to all the members of the Scientific Committee for their valuable contribution to forming the scientific spirit of the conference, as well as for their help in reviewing the submitted papers. We are also grateful to the staff involved in the local organization.

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