

## Preface

The European Conference on Numerical Mathematics and Advanced Applications (ENUMATH) is a series of conferences held every two years to provide a forum for discussion on recent aspects of numerical mathematics and their applications. The first ENUMATH conference was held in Paris (1995), and the series continued by the one in Heidelberg (1997), Jyväskylä (1999), Ischia (2001), Prague (2003), and Santiago de Compostela (2005).

This volume contains a selection of invited plenary lectures, papers presented in minisymposia, and contributed papers of ENUMATH 2007, held in Graz, Austria, September 10–14, 2007.

We are happy that so many people have shown their interest in this conference. In addition to the ten invited presentations and the public lecture, we had more than 240 talks in nine minisymposia and fifty four sessions of contributed talks, and about 316 participants from all over the world, specially from Europe. A total of 98 contributions appear in these proceedings.

Topics include theoretical aspects of new numerical techniques and algorithms, as well as to applications in engineering and science. The book will be useful for a wide range of readers, giving them an excellent overview of the most modern methods, techniques, algorithms and results in numerical mathematics, scientific computing and their applications.

We would like to thank all the participants for the attendance and for their valuable contributions and discussions during the conference. Special thanks go to the minisymposium organizers, who made a large contribution to the conference, the chair persons, and all speakers.

We would like to address our thanks to the invited speakers: A. Arnold (Austria), J. Barrett (United Kingdom), J. Chleboun (Czech Republic), M. Griebel (Germany), P. Joly (France), U. Langer (Austria), D. Marini (Italy), G. Papanicolaou (USA), G. Wanner (Switzerland), J. Xu (USA), and to P. Deuflhard (Germany) who gave the public lecture during ENUMATH 2007.

A big share of the success of this conference series should be given to the members of the Programme Committee: F. Brezzi, M. Feistauer, R. Glowinski, R. Jeltsch, Y. Kuznetsov, J. Periaux, R. Rannacher.

We are greatly indebted to the Scientific Committee (C. Bernardi, H. G. Bock, A. Borzi, C. Canuto, A. Bermudes, G. Haase, R. Hoppe, A. Iserles, F. Kappel, G. Kobelkov, M. Krizek, O. Pironneau, A. Quarteroni, S. Repin, S. Sauter, J. Sanz-Serna, C. Schwab, E. Süli), and to the local Organizing Committee (A. Borzi, B. Carpentieri, G. Haase, M. Hintermüller, F. Kappel, S. Keeling, V. Kovtunenkov, G. Peichl, G. Propst, W. Ring, S. Volkwein). Special thanks go to S. Fürtinger, E. Hötzl, A. Kimeswenger, O. Lass, A. Laurain M. Leykauf, B. Pörtl, E. Rath, J. Rubesa, M. Taus, C. Thenius, F. Tschischek, G. von Winckel for their help in the administration, computer support, and during the conference.

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