Special Volume on Computational Methods with Applications

Most of the papers in this volume were first presented at the conference *Computational Methods with Applications*, held in Harrachov, Czech Republic, during the week of August 19–25, 2007. The conference was in fact third in a row, following the tradition of the meetings which took place in 1997 and 2002 in Milovy, Czech Republic. The papers represent a good sample of the breadth of the field covered by the conference participants; each article underwent the standard refereeing process of ETNA.

The conference brought together 136 researchers from 23 countries, including a number of mathematicians from Central and Eastern Europe. The scientific program consisted of 25 plenary talks given by highly distinguished speakers of all generations, and a total of 70 contributed talks (in parallel sessions). A considerable proportion of talks was given by excellent young participants, including Ph.D. students from leading universities from many countries. Virtually every topic in numerical linear algebra was covered: direct and iterative methods for large sparse systems of equations, preconditioning techniques, eigenvalue problems, least-squares, ill-posed problems, Markov chains, matrix functions, parallel algorithms, special matrices, and so forth. A number of applications of numerical linear algebra to engineering and sciences were also covered. Since a considerable part of such applications arise from the numerical solution of partial differential equations, a part of the program was devoted to fundamental questions of mathematical modeling and to numerical analysis of partial differential equations. The interactions between the modeling, discretization and computation parts of the solution of practical problems is vital for further development of each of these complementary fields. Promoting such interactions was one of the main goals of the meeting.

A highly appreciated feature of "Harrachov 2007" was that the scientific program, while intense, did not exhaust all the available time and energy of the participants. Breaks after lunch allowed ample time for discussions and interactions among participants, and we know of several new research collaborations that were initiated during such breaks. The social program included a trip to Sychrov chateau. The history of the area, where the castle is situated, dates back to the 15th century.

Another major social event was the banquet which, as usual, was preceded and followed by toasts and speeches. One of these was given by Gene Golub, who reminisced about his first visit to Czechoslovakia in 1964 on the occasion of a meeting that was also attended by several other Harrachov 2007 participants, including Miroslav Fiedler and Ivo Marek. Gene took note of the amazing changes that have taken place in the Czech Republic in recent years, and praised the organizers not only for the excellent level of the scientific program, but also for the friendly and stimulating atmosphere of the meeting. Another speech was given by Daniel Szyld, who recalled the successful collaborations in organizing joint Czech–US meetings. Further information on the conference, including the scientific program, the slides of most plenary talks, and many photographs is available at `http://www.cs.cas.cz/harrachov`.

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distinguished speakers including Gene Golub, Wolfgang Hackbusch, and Nick Higham. We acknowledge also the endorsement by ILAS (The International Linear Algebra Society), with a generous support for the ILAS speaker Mark Embree. Last but not least, the conference was organized in cooperation with the Society for Industrial and Applied Mathematics (SIAM), SIAM Activity Group on Linear Algebra (SIAG/LA).

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The professional success of all three meetings Milovy 1997, Milovy 2002, and Harrachov 2007, together with their congenial atmosphere prompted many participants to ask the organizers to consider these as the beginning of a series of meetings on Computational Linear Algebra in Central Europe. We hope that the momentum built around these three meetings will indeed lead to a tradition of regular conferences.

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