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Preface

This book contains most of the papers presented at the 13th International Conference on Computational Methods and Experimental Measurements (CMEM/07) held in Prague in 2007. This series of conferences started in Washington DC at the beginning of the 1980s and has been reconvened every two years with continuous success. The primary aim of the meeting is to offer to the international scientific community an arena for the presentation and exchange of advanced approaches and applications in the fields of numerical methods and experimental determinations, with the principal attention and emphasis being devoted to their beneficial interaction and mutual influence.

Recent advances in the speed and efficiency of computers, and in computational techniques, have been major factors in the growth of numerical methods that now affect not only engineering, but our everyday lives. However, even if computational codes have been increasingly successful in simulating engineering problems, there still exists a wide range of them that need a comprehensive validation that can be accomplished only by means of experimental analysis. In the meantime, experimental measurements have become so sophisticated that experiments must very often be carried out with the help of computers and the data obtained have to be processed by means of numerical methods.

This volume contains a substantial number of excellent scientific papers, which have been grouped in the following sections:

- Computational and experimental methods
- Experimental and computational analysis
- Fluid flow
- Salts in porous materials
- Heat transfer
- Structural and stress analysis
- Experiments and analysis of reinforced concrete members
- Structural dynamics
- Dynamics and vibrations
- Detection and signal
- Advances in measurements and experiments
- Industrial applications

The Editors are grateful to all the authors for their valuable contributions and to the Members of the International Scientific Advisory Committee, as well as other colleagues, for their help in reviewing the papers published in this book and are most especially indebted to Prof. R. Èerný, C. G. Karayannis and Z. Bielecki who organised special sessions within the conference.

The Editors
Prague, 2007

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