Preface

The CILAMCE Congresses, encompassing different Engineering fields, started in 1979 in Porto Alegre as a continuation of the Civil Engineers conferences held in Rio de Janeiro in 1977 and in São Paulo in 1978. Over the last 25 editions, the CILAMCE conference has played a major role in the dissemination of the most recent computational applications and computational developments throughout the Iberian Latin American community. CILAMCE is nowadays the annual congress of the Brazilian Association for Computational Methods in Engineering (AB-MEC). Last year (2004) it was held in Recife, organized by the Federal University of Pernambuco (UFPE). The number of participants was 598 delegates from 16 countries (Americas, Europe and Asia) and from 20 states of Brasil. Initially, more than a 1000 abstracts were submitted and after a three stages reviewing process, 586 papers were accepted to be present in the conference and published in the conference proceedings. The Scientific Programme consisted of 6 invited plenary lectures and 16 invited mini-symposia keynote lectures performed by experts, 32 thematic mini-symposia with contributed papers, encompassing most Engineering and Applied Sciences fields, and a specific mini-symposia called "Research Beginners on Computational Mechanics" with a prize for the three best papers, created to stimulated the participation of undergraduate students.

As part of the 25^{th} Jubileu edition we contacted, or had been contacted, by two International Journals (LAJSS - Latin American Journal of Solids & Structures and CMNE – Communication in Numerical Methods in Engineering) in order to publish some selected papers from the CILAMCE'2004 congress.

The CILAMCE paper submission and reviewing process was performed "almost-fully" online. The process consisted of three stages: abstract submission and evaluation, first version of the full paper submission and reviewing process and final version submission with the reviewer corrections performed and checked by the mini-symposia coordinators. After that, the minisymposia coordinators were asked to select the best contributions of their mini-symposia. Out of the 32 mini-symposia 18 coordinators sent a list of selected papers. A special commission was formed to analyse the scope of the articles and to select the most appropriated journal, whenever there was no indication for which journal the paper should be submitted. The authors of the selected conference papers were invited to submit their contribution for possible publication in the referred journals, after fitting them into the journals format. An extra pear reviewer indicated by the journal editors performed a final analysis of the contribution and the journal editors gave the final acceptance. The Communication in Numerical Methods in Engineering have been publishing the papers selected for it through the normal issues and the Latin American Journal of Solids & Structures is publishing now this special issue that consists of 8 papers, involving a broad range of subjects in the field of computational methods in engineering.

We would like to thank the LAJSS editors for the invitation and help in organizing this issue to mark the 25^{th} CILAMCE edition. We are also indebt to the mini-symposia coordinators and to the reviewers for their careful reviews and constructive comments and suggestions, in special Prof. Alvaro Coutinho for his help in the previous mentioned special commission. Finally, we hope that this initiative will be repeated in the next editions of this well-established congress.

Invited Editors

Prof. Paulo R. M. Lyra (President of the Organizing Committee of the CILAMCE 2004) Department of Mechanical Engineering Federal University of Pernambuco - UFPE

Prof. Silvana M. B. Afonso da Silva (Vice-President of the Organizing Committee of the CILAMCE 2004) Department of Civil Engineering Federal Unviersity of Pernambuco - UFPE