ON THE FOURTH WORLD CONGRESS
ON COMPUTATIONAL MECHANICS

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Abstract. *In this article the essential data and impressions on the Fourth World Congress on Computational Mechanics are given.*

The Fourth World Congress on Computational Mechanics, was held in Buenos Aires, Argentina, on June 29-July 2, 1998, under the auspices of the IACM (International Association for Computational Mechanics). The first three congresses in the series were held in Austin (1986), Stuttgart (1990) and Tokyo (1994). The continuous importance of this research topic is demonstrated by the fact that the number of papers has increased from 400 papers presented in the first congress to over 1000 papers in the Buenos Aires meeting.

The developments that have taken place in the different theoretical and engineering application fields of the broad area of Computational Mechanics are illustrated by the contents of CD-ROM proceedings. The 700 papers included represent a Compendium of nearly 14000 pages. The papers are classified into the following main areas: (I) Mathematical Modeling and Numerical Methods, (II) Solid and Structural Mechanics, (III) Solid Materials Modeling, (IV) Fluid Mechanics (V) Heat Transfer and Fluid-Structure Interaction, (VI) Inverse Problems and Optimizations (VII) Software Development, Algorithms and Programming and (VIII) Applications Fields including problems in Biomechanics, Computational Physics, Electromagnetics, Environmental Sciences, Geomechanics, Forming Processes, Chemical Engineering, Robotics and Educational aspects of Computational Mechanics, among others.

The opening lecture "Achievements and unsolved problems in the finite element methods" was held by O. C. Zienkiewicz, University College of Swansea, Wales. He was first president of IACM, and a person whose books are most popular within the engineering users of the finite element methods. The next plenary lecture was "Advances in adaptive modelling of heterogeneous continuum", given by J. T. Oden, University of

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Texas at Austin, USA, the second (1990-1994) president of IACM, and a person whose papers and books cover equally thoroughly engineering, mechanical and mathematical aspects of Computational Mechanics. The plenary lecture "Computational mechanics and hemodynamics", was given by T. J. R. Hughes, Stanford University, USA, the newly elected president of IACM. The remaining four plenary lectures: "Some remarks on the current state of finite element methods", "Parallel stabilization of hyperbolic and Petrowsky systems", "Partitioned analysis of coupled systems" and "Development of a self-evident nodeless method of solution for the problem of solids"were given by K. J. Bathe, Massachusets Institute of Technology , USA, developer of the popular software packages SAP and ADINA, J. -L. Lions, College de France and Dassault Aviation, France, the leading mathematician in the area, C. Felippa, University of Colorado at Boulder, U.S.A., and T. Kawai, Science University of Tokyo, Japan.

The author of this report presented at the Conference the paper "An efficient continuous stress mixed model based on the Reissner's principle", written jointly by Dubravka Mijuca. Unfortunately, this has been the only paper from this country presented at the Congress. However, this fact doesn't represent the real state of our science and technology in the area, but is rather the consequence of the very modest financial resources available. E.g., one should note the existence of the strong group for the computational mechanics leaded by the M. Kojić at the University of Kragujevac, or the notable contribution of the researchers from the Civil Engineering Faculty of Belgrade, initiated by N. Hajdin, and continued by M. Sekulović et al, to mention only a few. At this point, one should once more point out the significance of this relatively new scientific area, connecting mathematics, mechanics, computer science and engineering sciences, and of vital importance in the transition of the low technology industry into the high technology industry, i.e. for the economy and the security of the country.

Bearing in mind our present insufficient international cooperation, especially in the area of Computational Mechanics, the participation at the World Congress has also been the opportunity to contact the leading international experts in this strategic and propulsive area. The writer of this article, as a member of the presidency of the Yugoslav Society for Theoretical and Applied Mechanics, discussed with several leading members of IACM, especially with M. Kleiber (Poland), the president of the Central European Association for Computational Mechanics, the possibilities of the future scientific cooperation.

O ČETVRTOM SVETSKOM KONGRESU
RAČUNARSKE MEHANIKE

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U članku su dati osnovni podaci i utisci sa IV svetskog kongresa računarske mehanike.