Preface of the "Symposium on modelling and simulation in computer sciences and engineering"

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Preface of the "Symposium on Modelling and Simulation in Computer Sciences and Engineering"

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The Symposium on Modelling and Simulation in Computer Sciences and Engineering was held into 12th International Conference on Numerical Analysis and Applied Mathematics, Rhodes, Greece, 22-28 September 2014.

Modelling and simulation, applied to computer science, engineering, and physical sciences, is a research area that uses the computational power of modern information processing systems to improve our understanding about the real world.Computer simulations play a fundamental role developing mathematical models to examine problems that would be too expensive, too much dangerous, or even impossible to study by direct experimentation. Moreover, virtual prototyping, using modelling and simulating software, is a keystone process to bring down the overall cost of designing and developing novel products. Indeed, the growing number of organisations using those technologies has led to a dramatic increase in demand for better research and skilled professionals, in this exciting research area.

The primary aim of this symposium was to provide new and state-of-the-art research regarding modelling and simulation techniques applied to science and engineering disciplines. In particular, the section includes the discussion of theoretical studies and experimental results with interest in various topics like modelling in engineering sciences and technology, dynamical systems models and methods, computational methods in engineering, computer science modelling and simulation, computer networks modelling, optimization, simulation and control theory, stochastic optimization, numerical methods and simulation, systems modelling, computational mathematics, analysis of mathematical models, algorithms and data structures, software design, control and systems engineering.

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Technical Committee: Anna Förster, Antonio Hurtado, Celestine Iwendi, Daniel Miranda, Duc Truong Pham, Helena Sofia Rodrigues, Isabel Gonçalves, Jianye Hao, Jorge Ribeiro, Koen De Turck, Lúcia Bilro, Mehmet Aksit, Paulo Caldas, Ravi Raghunathan, Saad Aljebori, Vana Jelicic, Victor Zadkov, Vilém Novák.

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Francisco Miranda was born on April 1, 1975 in Viana do Castelo, Portugal. He graduated in Mathematics from University of Coimbra in 1999. Having done research on Control Theory he earned his MSc (2003) and PhD (2008) degrees in Applied Mathematics from University of Porto. His research interests focus on stabilization and observability of control systems, optimal control, guidance control, numerical methods of stabilizer construction, time scales. Currently, he is Vice Director of School of Technology and Management of Polytechnic Institute of Viana do Castelo, and Professor and Head of Mathematics Department at the Polytechnic Institute of Viana do Castelo, Portugal. He is also a researcher at Center for Research and Development in Mathematics and Applications, University of Aveiro, Portugal, and research collaborator at Centro de Estatística e Modelação ofPolytechnic Institute of Viana do Castelo, Portugal.

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Carlos Abreu was born on September 8, 1976 in Esposende, Braga, Portugal. He graduated in Electronics and Telecommunications from University of Aveiro in 2005. Having done research on Instrumentation, Signal and Medical Image he earned his MSc degree in Biomedical Engineering in 2008. In 2010 he received the Advanced Studies Diploma in Biomedical Engineering from the University of Minho, where he is also pursuing his PhD in Biomedical Engineering. His research interests focus on: Wireless Sensors Networks for Medical Applications, Biomedical Instrumentation and Human Machine Interfaces for Disabled or Elderly People. Presently, he is working as Lecturer at the Polytechnic Institute of Viana do Castelo (IPVC).