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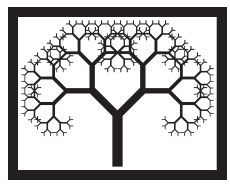

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Preface

This volume comprises the summaries of contributed papers presented at The Twelfth International Conference on Civil, Structural and Environmental Engineering Computing (CC 2009) held in Funchal, Madeira, Portugal from 1 to 4 September 2009. The full papers from the conference are available on the accompanying CD-ROM. This conference is part of the Civil-Comp Series series that commenced in 1983. The CC 2009 conference was held concurrently with The First International Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering (CSC 2009).

The special sessions included in this volume of Proceedings are:

- Steel and Steel-Concrete Composite Structures
  organised by L.F. Costa Neves and L. Lima
- Stability and Non-Linear Behaviour of Thin-Walled Members and Structures
  organised by D. Camotim and L. Dunai
- High Speed Trains: Vehicle Track Dynamic Analysis and Related Environmental Problems
  organised by J. Pombo and Z. Dimitrovová
- Climate Change as an Engineering Challenge
  organised by Ž. Turk
- Robust Optimal Design by Stochastic Optimization Procedures
  organised by K. Marti, G.I. Schuëller and T. Vietor
- Topology and Shape Optimization Problems
  organised by V. Pomezanski
- Optimum Design of Skeletal Structures
  organised by M.P. Saka
- Robust Optimisation for Structural Dynamics
  organised by A. Elhami and N. Bouhaddi
- Probabilistic Approaches to Structural Mechanics
  organised by A. Elhami and M. Karama
- Assesment of Structures using Numerical Models
  organised by F.J. Pallares and J.M. Adam Martinez
- Computational Experimental Mechanics
  organised by D. Borza
- Building Information Modelling
  organised by Y. Arayici
- Meshless, Mesh-free and Mesh Reduction Methods
  organised by S.M. Hashemi
- Coupled Multifield Problems
  organised by R. Schmidt
- Green Structures: Modeling, Design and Simulation
  organised by N.S. Al-Kaabi

- Algorithms Based on Domain Decomposition Methods
  organised by J. Kruis and V. Vondrak

We are particularly grateful to the organisers of these special sessions.

The following sessions are also included in this volume:

- Reinforced Concrete Structures
- Reinforced Concrete: Design
- Fibre Reinforced Concrete
- Nuclear Containment
- Steel Structures
- Materials Modelling
- Discrete Media Mechanics
- Masonry Structures
- Aluminium Structures
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- Structural Monitoring and Damage Detection Methods
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- Earthquake and Seismic Engineering
- Seismic Design
- Plate and Shell Problems
- Structural Mechanics
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- Fracture Mechanics
- Modelling Composites
- Composite Structures
- Dynamic Analysis of Structures
- Wide Span Structures
- Bridge Engineering
- Analysis and Design of Framed Structures
- Tall Buildings
- Dam, Arch and Embankment Engineering
- Rock Engineering
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- Traffic Engineering
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- Soil-Structure Interaction
- Fluid-Structure Interaction
- Computational Fluid Dynamics
- Modelling Acoustics Problems
- Optimization Problems
- Computer Aided Design
- Virtual Environments
- Parallel Computing

- Object Oriented Programming
- Modelling and Simulation: Computational Environments
- Mesh Generation
- Finite Element Technology
- Finite Volume Method
- Building Design
- Construction Engineering
- Project Management

Other papers presented at the conferences in 2009 are published as follows:

- *The Invited Lectures from CC 2009 are published in:*
  Trends in Civil and Structural Engineering Computing, B.H.V. Topping, L.F. Costa Neves and R.C. Barros, (Editors), Saxe-Coburg Publications, Stirlingshire, Scotland, 2009.
- *The Invited Lectures from CSC 2009 are published in:*
  Soft Computing in Civil and Structural Engineering, B.H.V. Topping and Y. Tsompanakis, (Editors), Saxe-Coburg Publications, Stirlingshire, Scotland, 2009.
- *The Contributed Papers from CSC 2009 are published in:*
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