

11th. World Congress on Computational Mechanics (WCCM2014)
5th. European Conference on Computational Mechanics (ECCM V)
6th. European Conference on Computational Fluid Dynamics (ECFD VI)
July 20 - 25, 2014, Barcelona, Spain

MULTI-SCALE AND MULTI-PHYSICS COMPUTATIONS IN FLUIDS AND SOLIDS

YOZO MIKATA* AND GLAUCIO H. PAULINO**

* Structural Methods Development
Bechtel P.O. Box 1072, Schenectady,
NY 12301-1072, USA
Email: aquarius_ym@hotmail.com

** Donald Biggar Willett Professor of Engineering
University of Illinois at Urbana-Champaign
Urbana, IL 61801, USA
Email: paulino@uiuc.ed

ABSTRACT

The symposium will address some of the emerging themes in the computational applied mechanics. Due to the enormous recent advances in computer hardware, software, and algorithms, many researchers are now able to obtain the numerical solutions for even more complex problems than before. Some of the key developments in this on-going process are the multi-scale, multi-physics, and parallel computations. The contributions will include atomistic/continuum computations, peridynamics, fast multi-pole method (FMM), acoustic and optical metamaterials, fluid-structure interactions, multi-phase flow, lattice Boltzmann method, magneto-electro-mechanical systems, computations in biological systems such as protein folding modeling and cell mechanics, high performance computing using MPI or OpenMP, etc. Cross-disciplinary contributions are particularly welcome.