14th World Congress on Computational Mechanics (WCCM XIV)
8th European Congress on Computational Methods in Applied Science and Engineering (ECCOMAS 2020)
July19- 24, 2020, Paris, France

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

300

YOZO MIKATA*, GLAUCIO PAULINO†

*Structural Methods Development
Fluor
P.O. Box 1072, Schenectady
NY 12301-1072, US
aquarius_ym@hotmail.com

†School of Civil and Environmental Engineering
Georgia Institute of Technology (GATech)
790 Atlantic Drive NW, Atlanta
GA 30332-0355, USA
paulino@gatech.edu

Key words: Multi-scale & Multi-physics Computations, Solid Mechanics, Fluid Mechanics.

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 and cortical folding modeling and cell mechanics, high performance computing using MPI or OpenMP, etc. Cross-disciplinary contributions are particularly welcome.