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

NEW TRENDS IN TOPOLOGY OPTIMIZATION

GLAUCIO H. PAULINO * , EMÍLIO CARLOS NELLI SILVA † AND KURT MAUTE *

* Newmark Laboratory, Department of Civil and Environmental Engineering,
University of Illinois at Urbana-Champaign,
205 N. Mathews Ave., Urbana, IL 61801-2352 USA

paulino@illinois.edu

http://research.cee.illinois.edu

† Department of Mechatronics and Mechanical Systems Engineering
University of Sao Paulo
Av. Professor Mello Moraes, 2231
Sao Paulo, SP, 05508-900, Brazil
ecnsilva@usp.br
http://lattes.cnpq.br/4065779842533056

*Department of Aerospace Engineering Sciences
University of Colorado
Boulder, CO 80309-0429, USA
maute@colorado.edu
http://www.colorado.edu/aerospace/maute_kurt.html

Key words: topology optimization, multiscale optimization, large scale optimization, reliability based design optimization.

ABSTRACT

This mini-symposium aims to bring together researchers working on various aspects of topology optimization applied to fluids, solids and structures. In particular, we are interested in recent advances in topology optimization. Suggested topics include, but are not limited to:

- * Novel and efficient topology optimization algorithms
- * New methods to handle manufacturing, stress and other constraints
- * Exact solutions to topology optimization problems
- * New methods to solve multi-objective topology optimization problems
- * Recent advances in reliability-based topology optimization (RBTO)
- * Efficient solution of industrial large scale topology optimization problems
- * Inclusion of microstructure in topology predictions

- * Recent advances in topology optimization applied to multi-physics problems
- * Exploiting high-performance computing in topology optimization
- * New methods of adaptive mesh refinement in topology optimization
- * Multiscale topology optimization