PhD position in Robust Topology Optimization of Structures at the Technical University of Cartagena, Spain

A four-year PhD position is available in the Structural Optimization Group in the Department of Structures & Construction at the Technical University of Cartagena. The position is part of the project: "An Integrated System for Topology Robust Optimal Design (SIDORTE) " and is fully funded by the Spanish Ministry of Science and Innovation. The PhD fellowship cover the full tuition, a monthly stipend and health insurance.

Context: The optimum structural design problem have gained an increasing importance due to the growing trend on the use of numerical applications in order to automate the design process. In particular, topology optimization results a powerful tool to support the choice of the designer in new and efficient conceptual designs. Deterministic Optimization deal with the design problem without to take into account the sources of uncertainties presented in real design (materials, loads, boundary conditions, etc.).

Description: This four year PhD project will undertake research in Robust Topology Optimization of continuum and discrete structures. In particular: (1) research in techniques for efficient uncertainty management of geometry, material properties, boundary conditions and loads , (2) Formulation and implementation of strategies to solve the high computational cost suffered from robust topology optimization problem. The objective is to provide efficiently optimal topologies of structures that are non-sensitive to uncertainty, which allows its application to real problems.

Requirements: Applicants should hold a degree in Engineering. They will be evaluated on the basis of their academic record and credentials, their previous exposure to Structural Optimization, Computational Solid Mechanics, Finite Element Analysis or Scientific Computing. The candidate must be familiar with MATLAB and have some experience in implementing numerical methods.

Deadline for application: 15 February 2012 (early application is recommended).

For more information, please email the head of group, pascual.marti@upct.es

To apply please email a CV, and your degree results preferentially before 15 February 2012 to the email address above.