

EngOpt 2014

4th INTERNATIONAL CONFERENCE ON ENGINEERING OPTIMIZATION LISBON, 7 – 11 SEPTEMBER 2014

A forum for Engineers, Mathematicians and Computer Scientists to share research and innovations, promoting interdisciplinary activities in all fields of Engineering Optimization.

Objectives

The main goal of EngOpt conferences is to periodically bring together engineers, applied mathematicians and computer scientists working on research, development and practical application of optimization methods applied to all engineering disciplines or developing basic techniques in this field.

About EngOpt

The first International Conference on Engineering Optimization took place in 2008 at Rio de Janeiro, the second one at Lisbon in 2010 and the third one at Rio de Janeiro in 2012. All conferences were very successful in number and quality of presentations. The proceedings of all those meetings are available at: www.engopt.org

Engineering Design Optimization

Modern design techniques seek for the best design to perform the desired tasks. Engineering Optimization deals with the optimal design of elements and systems in all engineering fields.

Nowadays, use of Design Optimization techniques is rapidly growing in most of engineering disciplines, like automotive, aeronautical, mechanical, civil, nuclear, naval, mechanical, electrical, energy and offshore engineering. This is due to the increase of technological competition and the development of strong and efficient techniques for several practical applications.

MDO - Multidisciplinary Design Optimization

Engineering Systems are increasingly complex and represented by large and sophisticated numerical models. They involve several interacting disciplines or are made up of distinct interacting subsystems that must be considered simultaneously to obtain efficient designs.

Multidisciplinary Design Optimization is devoted to the design of complex systems involving interacting subsystems or disciplines. The main scientific challenges of MDO are concerned with the development of strong and efficient numerical techniques and with the computational organization required for the necessary coupling of codes employed in interacting disciplines.

Inverse problems

Numerical methods for inverse problems in most of cases are based on optimization techniques similar to those employed in optimal design. This field, applied in all engineering disciplines, is of utmost importance for Engopt conference.

Engineering Simulation Involving Optimization Techniques

Several physical phenomena are naturally represented by an optimization problem. This is the case when the "equilibrium" is attained at the minimum of an energy function. In several applications, constraints must be satisfied. This is the case of contact problems in solids mechanics.

Basic Numerical Techniques

Engineering Optimization requires a large set of basic computer tools. This is the case of several CAD tools for geometric modeling, engineering analysis methods, sensitivity analysis as well as mathematical programming and genetic or evolutionary optimization algorithms.

About Interdisciplinary in Engineering Optimization

Modern Engineering Optimization is strongly interdisciplinary in two axes. The need of integration of basic and applied techniques and to solve real engineering problems requires the cooperation of engineers, mathematicians and computer scientists, working on research and practical application.

EngOpt is intended to be a forum to expose and share current and future research and innovation in all techniques involved in Engineering Optimization as well as in the relationships among them.

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