Department of Structural Engineering
University of California, San Diego
SE 290 Seminar

Dr. Daniel A. White
Computational Engineering Division
Lawrence Livermore National Laboratory

"Computational Design Optimization at Lawrence Livermore National Laboratory"

Wednesday, November 1, 2017
1:00 pm - 1:50 pm, Pepper Canyon Hall, Room 122

http://structures.ucsd.edu/node/2126

Abstract

There are two trends that are motivating research in computational design optimization. First, advances in manufacturing technology such as additive manufacturing (3D printing) have enlarged the design space and engineers need better computation tools to take full advantage of the manufacturing possibilities. Secondly, available computing power is such that thousands of finite element simulations can be performed in hours, better computation tools are required to take advantage of this computing power. The goal of computational design optimization is for the engineer to provide high level objectives (maximize stiffness, reduce cost) and constraints (mass, stress) the computer determines the optimal design by automatically performing thousands of finite element simulations.

This talk will provide an overview of gradient-based density methods for topological optimization, with discussions on multiscale design and design under uncertainty.

Biography

Dr. Daniel White earned BS and MS degrees in electrical engineering, and the Ph.D. degree in computational science, all from the University of California at Davis. Dr. White started his career in the defense industry working for Hughes Aircraft (formerly General Dynamics) developing radar systems and low-observables technology. Dr. White is currently in the Computational Engineering Division at Lawrence Livermore National Laboratory where he specializes in numerical methods and high- performance computing for a wide range of applications. He is currently Principle Investigator on a Strategic Initiative on Computational Design Optimization.

http://structures.ucsd.edu/node/2126

Sponsored by Professor Alicia Kim

For more information on this seminar, contact Lindsay Walton at 858-822-3273 or lwalton@ucsd.edu