

The Department of Mechanical Engineering/College of Engineering and Applied Sciences
Stony Brook University

**TOPICS IN MECHANICAL ENGINEERING
THE FRANK W. OTTO DISTINGUISHED LECTURE SERIES**



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**Lecture Title: The Meshless Local Petrov-Galerkin (MLPG) Method for
Computer Modeling in Engineering & the Sciences**

Friday, April 27, 2012, 2PM, SAC Ballroom B

Abstract

The speaker will explain his MLPG approach, which he hopes will be a viable alternative to the widely-used mesh-based Finite Element & Boundary Element methods for computer modeling in engineering & the sciences. The more computationally efficient special cases of the MLPG approach, the Finite-Volume-Mixed MLPG method, and the Galerkin-Mixed MLPG method, are discussed in the context of both large-deformation inelastic solid-mechanics, and convection-dominant fluid mechanics. A variety of results is presented, and the superiority of the MLPG approach is illustrated in each case.

Biography

Satya N. Atluri is a scholar employed by UCI. His professional interests lie in the areas of aerospace and mechanical engineering. His teaching and research interests include: theoretical, applied, and computational mechanics of solids and fluids at various length and time scales; computer modeling in engineering and sciences; meshless and other novel computational methods; structural longevity, failure prevention, and health management. Over 45 years, he has mentored more than 350 graduate students, post-docs, and visiting professors, who now serve as Presidents, Deans, and Professors at universities, as high-level officials in governments, and as corporate leaders, around the world. His colleagues have instituted the Satya N. Atluri Medal (http://en.wikipedia.org/wiki/Satya_N._Atluri_ICCES_Medal), which has been awarded recently to: Ratan Tata (Chairman, Tata Sons, India), Subra Suresh (Director, NSF, USA), and Guangjing Cao (President, Three Gorges Company, China).

