MISSOURI S&T University of Science & Technology

Department of Mathematics and Statistics

Ingram Lecture Series, Special MICAMS Seminar

Monday, March 6, 4:10 – 5:20 pm

Butler-Carlton Hall 318

Coffee and refreshments at 4:10pm followed by the lecture at 4:20pm

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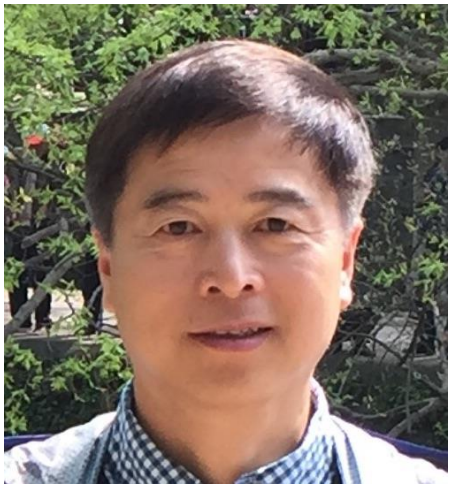
Fast Spectral Methods: Algorithms, Analysis and Applications

This first presentation is for a GENERAL AUDIENCE



JIE SHEN

Professor

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Abstract: In recent years, spectral methods have become a major tool for computational scientists and engineers because of their superior accuracy and efficiency when properly implemented. In this talk, I shall present essential ingredients to construct fast spectral algorithms and to carry out their error analysis. Particular emphasis will be given for problems with weak singularities for which direct application of spectral methods is not effective.

Biographical Sketch: Professor Jie Shen received his B.S. in Computational Mathematics from Peking University in 1982, and his Ph.D in Numerical Analysis from Universite de Paris-Sud at Orsay in 1987. Before joining the Purdue Faculty in Fall 2002, he served as Professor of Mathematics at Penn State University and University of Central Florida. Since Jan. 2012 he serves as the Director of Center for Computational and Applied Mathematics at Purdue University.

He is a recipient of the Fulbright award in 2008 and the Inaugural Research Award of the College of Science at Purdue University in 2013, and an elected Fellow of AMS. He serves on editorial boards for several leading international research journals, and has authored/coauthored over 160 peer-reviewed research articles and two books. His main research interests are numerical analysis, spectral methods and scientific computing with applications in computational fluid dynamics and materials science.