



AMERICAN UNIVERSITY
WASHINGTON, D C

THE DEPARTMENT OF MATHEMATICS AND STATISTICS COLLOQUIUM

Numerical Grid Generation and Effective 3D Visualizations for the NIST Digital Library of Mathematical Functions

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3:30 p.m. on Tuesday, October 22nd

Ward 303

Abstract: High-level mathematical functions are important for solving many problems in the mathematical and physical sciences. Airy functions provide closed form solutions to field equations that arise in quantum mechanics, optics and electromagnetism. The gamma and beta functions provide the starting point for the computation of more complex functions such as the Riemann zeta function and others that occur in number theory, probability theory and mathematical physics.

The goal of the NIST Digital Library of Mathematical Functions (DLMF) project is to provide a Web-based resource that will deepen the understanding of such functions. A key feature of the NIST DLMF will be 3D graphics and interactive visualization capabilities.

This talk will look at the progress to date in developing effective 3D visualizations and discuss techniques developed to handle functions whose computational domains are irregular, discontinuous, or multi-connected because of branch cuts, poles or other singularities.

Presented by

THE AU MATH/STAT DEPARTMENT AND THE AU CHAPTER OF SIGMA XI

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Next Colloquium:

Tuesday, October 29, 2002 Ward 303

Artur Elezi, American University

TBA
