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## Computational Mathematics Seminar Series

**Numerical methods for transmission eigenvalues****Jiguang Sun, Michigan Technological University**

Associate Professor, Department of Mathematical Sciences

Lockett Hall 233  
March 11, 2014 - 03:30 pm**Abstract:**

Transmission eigenvalue problem arose in inverse scattering theory and received significant attention recently. In this talk, we first write the problem as a non-selfadjoint fourth order problem. Then we show that the transmission eigenvalue can be obtained by solving a series of self-adjoint fourth order problems which is discretized by the Argyris elements. Then we propose an iterative method to compute transmission eigenvalues. Numerical examples show the viability of the proposed method. We also discuss a mixed finite element method for the transmission eigenvalues.

**Speaker's Bio:**

Dr. Jiguang Sun is currently associate professor at the Michigan Technological University's Department of Mathematical Sciences. He earned his M.S. in Applied Mathematics from the University of Delaware, another M.S. in Computer Sciences from the University of Delaware, and his Ph.D. in Applied Mathematics from the University of Delaware.

Sun's research interests include:

- ▄ Numerical methods for partial differential equations
- ▄ Inverse scattering problems
- ▄ Scientific computing
- ▄ Electromagnetic methods in geophysics

