Prof. Jiguang Sun
Delaware State University

“Numerical methods and applications of transmission eigenvalues”

Abstract:
Transmission eigenvalues have important applications in inverse scattering theory. For example, they can be used to obtain the index of refraction of the scattering target. Since the problem is non-standard, classical methods result in non-Hermitian matrix eigenvalue problems. In this talk, we first discuss iterative methods to compute transmission eigenvalues. Then we show that these methods can be integrated into algorithms for the estimation of the index of refraction using near or far field data. Motivated by the fact that Dirichlet and transmission eigenvalues can be obtained from scattering data, we propose a new eigenvalue method using multiple frequency data (EM2F). The method detects eigenvalues and builds indicator functions to reconstruct the target.

Friday, November 11, 2011
3:00 PM in 372 Jabara Hall

*Please come join us for refreshments before the lecture at 2:30 p.m. in room 353 Jabara Hall.*