WICHITA STATE UNIVERSITY

Department of Mathematics and Statistics

The Lecture Series in the Mathematical Sciences Presents Our Guest:

Prof. Maarten de Hoop

Purdue University

"Analysis of wave-equation tomography and imaging with curvelets"

Abstract:

We discuss seismic wave-equation tomography and the inverse source problem, and their interconnection with the inverse scattering of seismic reflection data, from the point of view of imaging and optimization. In all cases, under certain weak conditions, the imaging can be written in terms of a composition of propagators that solve first-order (paradifferential) evolution equations. Exploiting a curvelet decomposition, the propagator can be constructed and computed through the solution of a particular Volterra equation of the second kind, the kernel of which is optimally sparse. This leads to an understanding of how the scales of medium variation are coupled to scales in the wavefield and the data. (Joint work with G. Uhlmann, H. Smith and R.D. van der Hilst.)

Friday, February 10, 2006
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.