

WICHITA STATE UNIVERSITY
Department of Mathematics and Statistics

*The Lecture Series in the
Mathematical Sciences Presents Our Guest:*

Prof. Chunsheng Ma
Wichita State University

*“Some important issues in the development of
space-time correlation models”*

Abstract:

The world is dynamic at many scales in space and time. There is now considerable interest in spatio-temporal data mining and spatio-temporal modeling in the environmental, informational, and geophysical sciences. Whenever possible and available, a rational approach for modeling spatio-temporal data would start from a theory or mechanism that explains the underlying physical knowledge. In reality, however, no obvious mechanism may exist, and frequently it is such a theory that needs to be developed from observational or experimental study. For this purpose, statistical techniques are often very important tools, and static and dynamic models to demonstrate the spatio-temporal mechanism are prominent among these.

Two commonly used tools to describe the space-time interaction and dependence are the covariance function and variogram. In this talk we will briefly survey some recent advances on how to construct spatio-temporal variograms and covariance functions, and discuss several issues in the development of space-time covariance models, which include separability, stationarity, smoothness, long-range dependence, the Gaussian assumption, the range of space-time correlation, and aliasing and embedding problems.

Friday, September 30, 2005
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.*