

Auburn University Montgomery

Department of Mathematics

Colloquium/*MAMS*

Time: Friday, October 20, 2006, 2:00pm

Place: Auburn University Montgomery, Goodwyn Hall, Room 202

Speaker: Yuesheng Xu, Syracuse University

Title: Multiscale Multiparameter Regularization for Ill-Posed Problems
and Its Applications in Signal and Image Processing

Abstract:

An operator equation $Ax = b$ is called ill-posed if the inverse of A is unbounded. When the equation is ill-posed, a small perturbation in the data b will result in large perturbation in the solution. We review the classical regularization method for ill-posed problems. The classical regularization method which use a single penalty parameter can be improved if one works in a multiscale analysis setting. We introduce different parameters in different frequency scales. This is called the multiparameter regularization based on a multiscale decomposition. Convergence of the method will be discussed.

We also present its applications to signal and image processing.

Refreshments will be served at 2:00pm; colloquium begins at 2:30pm.