



# Announcing

A COS Seminar

May 1, 2009 at 2:00 pm

Southern Hall 303

at The University of Southern Mississippi

**Speaker: Haiyan Tian**

Department of Mathematics  
The University of Southern Mississippi

**Title: Direct solution of ill-posed problems for elliptic operators by a Delta-shaped basis**

**Abstract:**

A direct meshless method is developed for solving ill-posed problems of elliptic operators. A Delta-shaped basis and the method of fundamental solutions are used to effectively handle scattered data in the domain and on the boundary. The use of the Delta-shaped basis also results in an easy derivation of a particular solution. The corresponding ill-posed homogeneous Cauchy problem is solved by the method of fundamental solutions coupled with Tikhonov regularization. The method is totally mesh free and can be used for domains of irregular shapes. Numerical results show that this method is accurate and stable against perturbed data.

**Further Information**

Further details and information about this and other departmental activities is available online at [http://www.math.usm.edu/bulletin\\_board/](http://www.math.usm.edu/bulletin_board/).