

Applied and Computational Mathematics and Statistics Colloquium

James Delaney
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will give a lecture entitled:

A Bayesian Approach to Estimating Market Implied Risk Neutral Densities

Monday, February 28th, 2011

4:30 PM

Location: 129 Hayes-Healy Center

Abstract:

Contemporaneous prices of financial derivatives can provide much information about the so-called "market implied risk neutral distribution" (MIRND) of the asset that is underlying those derivatives. Here we propose a Bayesian model to provide the regularization necessary for estimating a MIRND that corresponds to a set of options' prices. The presence of nonlinear dependence among the model parameters presents a challenge in the implementation of standard (Metropolis-Hastings) MCMC techniques for simulating from the resulting posterior distribution. We provide details on modifying the simulation methodology to overcome this challenge and illustrate its implementation with real data.