

1035-35-1057 **Paul D DuChateau** and **Trent C Kull***, Mathematics Department, 175 Bancroft Hall,
Winthrop University, Rock Hill, SC 29733. *Coefficient recovery in parabolic initial boundary value
problems.*

This talk will consider the inverse problem of identifying spatially dependent coefficients in linear, parabolic, partial differential equations with specified initial and boundary conditions. Specifically, we'll view the recovery of the diffusivity coefficient in the heat equation using a very limited amount of data on a portion of the spatial boundary. I'll outline the Backus-Gilbert approach, modified with an adjoint method, in the construction of an approximate solution to the problem. This alternative recovery technique ensures the precision of the resolution is independent of the spatial grids used to approximate the coefficient and the solution to the equation. I'll then show results of numerical experiments for the single, spatial variable case. (Received September 18, 2007)