

Discrete Mathematics Seminar

Time: Friday, 10 October 2014, 2:00-3:00 PM
Room: 237 Derrick Hall

Talk 1: A fast marching method for the Stefan problem
Speaker: Gabe Wood, Master's Student in Applied Math Program, Texas State University

Abstract:

We consider a level set formulation for a phase change problem. A fast marching method is used to extend the jump condition on the free boundary in a manner that preserves the signed distance property of the level set function when the level set equation is solved at the next time step. Numerical examples will be presented.

Talk 2: A pseudo spectral method for the Stefan problem
Speaker: Dr. Raymond Treinen, Mathematics Department

Abstract:

We consider phase change problems in radially symmetric domains. A pseudo spectral method is used, based on Chebyshev points and coupled with a 4th order Runge-Kutta time step. Additionally, we present results from the related Hele-Shaw problem.