Other - Math Department Colloquium

Numerical Analysis For Multi-Physics Moving Interface Problems

Shawn Walker, Louisiana State University

Lockett Hall 277
September 17, 2015 - 03:30 pm

Abstract:

Moving interface and free boundary problems play a critical role in many areas of mathematics, physics, and engineering (examples are surface tension/curvature-driven flows and other geometric flows). Many new computational methods have been developed in recent years to tackle these problems in the presence of other physical effects. In this talk, I will discuss modeling and numerical analysis for three areas: two-phase problems, shape optimization, and liquid crystals. I will highlight theoretical results for modeling and simulating these problems, as well as show numerical results and simulations to illustrate the methods.

Refreshments in the Keisler Lounge (3rd floor Lockett).

Speaker's Bio:

Shawn Walker is an assistant professor in mathematics. He received his PhD in aerospace engineering from the University of Maryland, held a postdoctoral position at the Courant Institute (New York University), and joined the LSU faculty in 2010 in the computational mathematics group. His research interests include mathematical modeling and PDEs for moving/free boundary problems, finite element methods, mesh generation and PDE-constrained (shape) optimization.

This lecture has refreshments @ 03:00 pm

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