Physical Mathematics Seminar

Climate Change and the Mathematics of Transport in Sea Ice

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ABSTRACT:

Sea ice is both an indicator and agent of climate change. It also serves as a primary habitat for extensive algal and bacterial communities which sustain life in the polar oceans. Fluid flow through porous sea ice mediates a broad range of processes, such as the growth and decay of seasonal ice, the evolution of ice pack reflectance, and biomass build-up. A new, mathematical understanding of the fluid permeability of sea ice, and the thermal evolution of its microstructure, promises to improve forecasts of how global warming will affect the polar ice packs, and how ecosystems there may respond. Related work on electrical properties will help in monitoring ice thickness. Video from a 2007 Antarctic expedition where we measured fluid and electrical transport in sea ice will be shown.

TUESDAY, MAY 12, 2009
2:30 PM
Building 2, Room 105

Refreshments at 3:30 PM in Building 2, Room 349
(Applied Math Common Room)

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