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MATHEMATICS COLLOQUIUM SERIES  
UNIVERSITY OF CENTRAL FLORIDA



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**Regularity of Boundary**  
**Regularity of Expanding Front and**  
**Its Application to Solidification/Liquidation**  
**in Undercooled Liquid/Superheated Solid**

by  
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**Abstract**

In this talk, I will demonstrate that fronts of expanding domains with Hölder continuous speeds are contained in finite unions of Lipschitz graphs. As an application, the global in time existence of a solution to a free boundary problem modelling solidification in undercooled liquid or liquidation in superheated solid is established; here the propagation speed of the liquid/solid interface is assumed to be a known positive smooth function of the temperature, known as a kinetic undercooling/superheating effect.

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DATE: Thursday, March 29, 2007  
TIME: 3:30 – 4:30pm  
PLACE: Math and Physics Building, Room 318

Refreshments served at 3:00pm in Room 318.