



Universidad  
Carlos III de Madrid

# Seminario del Instituto Gregorio Millán

## Multi-level Optical Imaging Algorithm Based on Radiative Transport Equation

**Hongkai Zhao**

UC Irvine

### **Abstract**

In this talk I will first discuss a fast forward solver for radiative transport equation (RTE), the most accurate model for in vivo photon migration which is crucial for optical and molecular imaging. Our algorithm is based on a novel multigrid method in both physical and angular space that can effectively deal with different regimes of transport. Then I will introduce a few a multi-level optical imaging algorithms that can achieve high resolution with reduced computation cost and improved stability. Based on noise model and prior information we propose various combinations of fidelity and regularization.

Our recently developed fast multigrid RTE solver and imaging methods are available at <http://sites.google.com/site/rtefastsolver>.

- **DÍA Y HORA: Lunes, 22 de marzo de 2010 a las 12:30**
- **LUGAR: Edificio Sabatini. Aula 2.1.D04**