

# APPLIED MATHEMATICS COLLOQUIUM

## EARTHQUAKE MODELING: FROM FAULT FRICTION TO SEISMIC HAZARD

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### ABSTRACT:

Earthquakes occur when the two sides of a fault slip in response to a rapid weakening of the fault's frictional strength. In this talk, I will discuss some of the physical processes occurring within the fault zone during seismic events (e.g., shear heating of pore fluids, poroelastic response to compressional or extensional stresses, melting of microscopic frictional contacts) and computational models that simultaneously solve for the transport of fluid and energy in the fault zone together with the elastodynamic response of the rocks surrounding the fault. I will also discuss how dynamic earthquake models are in the process of changing seismic hazard analysis.

**MONDAY, FEBRUARY 11, 2008**

**4:30 PM**

**Building 2, Room 105**

*Reception at 4:00 PM in Building 4, Room 174  
(Math Majors Lounge)*

Applied Math Colloquium: <http://www-math.mit.edu/amc/spring08>

Math Department: <http://www-math.mit.edu>



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