



ESPCI
Laboratoire PMMH
10 rue Vauquelin, 75231 Paris Cedex 05



Séminaire PMMH

Bureau d'Études, Bâtiment L, 2^{ème} étage

Vendredi 20 juin 2014, 11h00-12h00

Michael Falk

John Hopkins University

Relating Continuum, Mesoscale and Atomistic Models of Amorphous Plastic Response

In this informal seminar I plan to discuss the issues at stake in understanding how amorphous materials respond to stress. I will briefly introduce the ways that atomistic simulation techniques like molecular dynamics and athermal quasistatic shear are used to investigate disordered materials. I will also review the shear transformation zone (STZ) theory we use to model these materials as continua. My goal will be to discuss emerging mesoscale lattice models in the context of these closely related simulation and theory studies. What problems and opportunities arise in attempting to make close comparisons amongst these representations? Do these other investigations provide information that can help guide the further development of mesoscale models so that they may better bridge the divide between atomistic simulation and continuum theory?