

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Simulating slow strain-rate processes in disordered solids

PENGHUI CAO, HAROLD S. PARK, XI LIN, Department of Mechanical Engineering, Boston University — A generic computational scheme is developed in this work to investigate extremely slow strain rate processes, including the experimentally accessible strain rates and even lower ones, for disordered materials systems. We use a self-learning metabasin escape algorithm to capture the strain-rate and temperature dependent stress relaxation events for a binary Lennard-Jones alloy. It is found that the yield stress decreases when the strain rate decreases and when the temperature increases.

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Date submitted: 29 Nov 2011

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