Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Fracture mechanics and crack propagation in fragile matter BRYAN CHEN, STEPHAN ULRICH, NITIN UPADHYAYA, VINCENZO VITELLI, Leiden University — Using simulations and theory, we investigate fracture processes and the formation of cracks in near-isostatic networks derived from jammed packings in both the quasi-static limit and with molecular dynamics. We study how localized cracks in networks with high coordination number become randomly distributed and isolated bond breakages near the isostatic point and suggest that this may be related to the scaling of the size of the process zone with characteristic lengths from jamming.

Bryan Chen
Leiden University

Date submitted: 09 Nov 2012 Electronic form version 1.4