

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Spinodal nucleation effects in heterogeneous systems with long range interactions JAMES SILVA, WILLIAM KLEIN, Boston Univ, HARVEY GOULD, Clark University, KANG LIU, Boston Univ — The kinetics of phase transitions in heterogeneous systems remains an area that is not well understood due to experimental difficulties despite heterogeneous nucleation being an occurrence in real systems where impurities are a common reality. In this talk work is presented in developing an understanding of nucleation near the mean field spinodal in an Ising model modified to introduce heterogeneity to the system. The effect of heterogeneity on the critical droplet properties in this simple model is investigated. The question of using a mapping to a percolation transition is also investigated in this heterogeneous system with the goal of defining a critical droplet object allowing for a geometric interpretation of thermal fluctuations in this heterogeneous system.

James Silva
Boston Univ

Date submitted: 15 Nov 2013

Electronic form version 1.4