

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Sorting Category: 12.5 (T)

Exact Solutions for Anisotropic Coarsening in the Dilute Limit WILLIAM ROSENBAUM, Reed College, MELINDA GILDER, BENJAMIN VOLLMAYR-LEE, Bucknell University — We study the influence of anisotropy on coarsening dynamics via two dilute coarsening models: Lifshitz-Slyozov theory for locally conserved order parameter dynamics, and Wagner theory for the globally conserved analog. We adopt a perturbative approach to analyze the effect of surface tension anisotropy on drop shapes and the scaled drop size distribution. In both models we find that coarsening solutions exhibit growth laws that are unchanged from the isotropic theories, $L \sim t^{1/3}$ and $L \sim t^{1/2}$ respectively, and drop shapes that are in general nonspherical and non-Wulffian. We also determine that the drop size distribution varies from the isotropic case.

Prefer Oral Session
 Prefer Poster Session

Benjamin Vollmayr-Lee
ben.vollmayr-lee@bucknell.edu
Bucknell University

Date submitted: 27 Nov 2007

Electronic form version 1.4