

Abstract Submitted  
for the DFD11 Meeting of  
The American Physical Society

**Reduced model for multi-component condensation** DENNIS VAN PUTTEN, ROB HAGMEIJER, University of Twente, RYAN SIDIN, University of Suriname — An extremely efficient reduced model for multi-component condensation is presented. The Becker-Döring (BD) equations are approximated by the General Dynamic Equation (GDE) in the supercritical region. The subcritical and critical regions are replaced by a source point that injects clusters into the supercritical region. The location and strength of the source point are determined from local estimates of the Gibbs free energy function, and the diffusion term in a corresponding Fokker-Planck equation. The result is a curve in composition space with Dirac delta function character in planes perpendicular to the curve. Integral properties of the GDE and BD solutions compare well for a typical two-component nucleation pulse experiment and computational effort is reduced by five orders of magnitude.

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Date submitted: 05 Aug 2011

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