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Mean-field Theory of Multicomponent Phase Coarsening KE-GANG WANG, Department of Physics and Space Sciences, Florida Institute of Technology — Study of phase coarsening in multicomponent systems is rare. Morral and Purdy developed a general theoretical frame for phase coarsening in n-component alloys. However, all work considered only the effect of solution thermodynamics, and ignored the kinetic effect from non-zero volume fraction. Therefore, all studies are valid only in the case of vanishing volume fraction. When V_V is not zero, the interactions among precipitates exist. The diffusion screening length is used to describe these interactions, and it is found that the growth rate of particle depends on the volume fraction through diffusion screening length. A mean-field theory of multicomponent phase coarsening will be presented, which includes effects of both multicomponent thermodynamics and kinetics from nonzero volume fraction.

Ke-Gang Wang
Department of Physics and Space Sciences, Florida Institute of Technology

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