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Phase-field Simulation of Phase Coarsening at Ultra-high Volume Fractions KE-GANG WANG, XUERU DING, Department of Physics and Space Sciences, Florida Institute of Technology, Melbourne, FL 32901 — The study of phase coarsening kinetics during microstructure evolution is critical to a variety of industrial applications involving two-phase systems in which the dispersed phase controls the properties of the material. Liquid-phase sintering, casting and spray deposition are just a few examples of processes in which the coarsening process has important technological implications. In this talk, the dynamics of phase coarsening at ultra-high volume fractions ($V_V > 0.9$) will be presented based on 2-D phase-field simulations. Kinetics of phase coarsening and spatial correlations in microstructures will be revealed. Pair distribution functions in microstructures will be shown. The scaled particle-size distribution as functions of the dispersoid volume fraction will be demonstrated. Finally, computational results are compared with experimental observations.

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