RUSTUM CHOKSI, McGill University

Asymptotic Analysis of the Dilute Regime in Phase Field Models

Via an asymptotic development of the energy, we explore the small volume fraction regime associated with phase field models containing long-range interactions. Using the language of Gamma-convergence, we describe both the leading order behavior — associated with coarsening of particles, and the next-order behavior — associated with self-oganiziation of particles. This is joint work with M. Peletier (TU Eindhoven).

We also discuss work in progress with N. Le (Columbia) and Peletier which exploits the Gamma-limit structure of the energy to prove convergence of the associated gradient flows. In particular, we connect to the well-known LSW theory for Ostwald ripening.