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Sharp interface limits of some diffusive interface models

The diffusive interface models are widely adopted in the description of the evolution of interfaces in continuum mechanics. These models either originate from continuum models or can be constructed to purposely reproduce a given sharp interface model when the thickness of their diffused interface trends to zero. In this talk we shall review a few classical methods in the proof of the convergence of the dynamical Ginzburg-Landau equation, a typical diffusive interface model. Then we discuss the possible applications of these methods to more sophisticated models.