

A study on traveling waves to the phase transition models with a degenerate principal term

Peicheng Zhu

Abstract

This talk is concerned with the investigation of existence of traveling wave solutions, including stationary solutions, to some new phase field models with a degenerate term which describe the diffusionless phase transformations of solid materials or phase transition due to interface motion by interface diffusion. We investigate the models in both the order-parameter-conserved case and the non-conserved case. Also we compare the results with those for the Allen-Cahn /Cahn-Hilliard equation coupled with linear elasticity, which are models for diffusion-dominated phase transformations in elastic solids.