数学与系统科学研究院

计算数学所学术报告

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报告题目：

Linear Stabilized Semi-implicit Schemes for the Nonlocal Cahn-Hilliard Equation

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311 报告厅

Abstract:

In this paper, two linear stabilized semi-implicit schemes with first and second order temporal accuracy respectively, are proposed for solving the nonlocal CahnHilliard equation. In both schemes we treat the nonlocal diffusion term implicitly and the nonlinear chemical potential part explicitly, and add an artificial term for the sake of stability. The energy stabilities and error estimates of the schemes are rigorously established in the time-discrete sense. Numerical experiments are carried out for the nonlocal Cahn-Hilliard equipped with the Gaussian kernel. We numerically verify convergence rates of the proposed schemes and make a comparison of the phase transition process with the corresponding local case. In addition, long time simulations of the coarsening dynamics are also performed to predict the 1/3 power law of the energy decay.

欢迎大家参加！