

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Zhonghua Qiao**

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报告题目:

**Exponential time differencing
schemes for nonlocal Allen-Cahn
equations**

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下午 16:40-17:40

报告地点: 数学院南楼九层

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Abstract:

In this work, we construct exponential time differencing (ETD) schemes for NAC equation. We establish the discrete maximum principle by using the properties of matrix exponentials, and then the energy stability and the maximum-norm error estimates are obtained in the discrete sense. In addition, we also prove the asymptotic compatibility of the proposed scheme, which implies the robustness of numerical approximations to the NAC equation. The convergence rates are verified numerically with respect to the discretization and the nonlocal parameters. A further numerical investigation is carried out for the steady state solutions on the relationship between the discontinuities and the nonlocal parameters.

欢迎大家参加！