

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Dong Li**

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报告题目:

**Stability of semi-implicit methods in
phase field models**

邀请人: 郑伟英 研究员

报告时间: 2017 年 7 月 18 日 (周二)

下午 16:00-17:00

报告地点: 数学院南楼五层

514 教室

Abstract:

Recent results in the literature provide computational evidence that stabilized semi-implicit time-stepping method can efficiently simulate phase field problems involving fourth-order nonlinear diffusion, with typical examples like the Cahn-Hilliard equation and the thin film type equation. The up-to-date theoretical explanation of the numerical stability relies on the assumption that the derivative of the nonlinear potential function satisfies a Lipschitz type condition, which in a rigorous sense, implies the boundedness of the numerical solution. I will discuss a group of recent results which remove the Lipschitz assumption on the nonlinearity and prove unconditional energy stability for the stabilized semi-implicit time-stepping methods. Time permitting I will also mention some more recent developments.

欢迎大家参加！