

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Cheng Wang**

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报告题目:

A second order accurate energy stable linear scheme for the epitaxial thin film growth model without slope selection

邀请人: 谢和虎 研究员

报告时间: **2016 年 12 月 28 日 (周三)**

上午 10:00-11:00

报告地点: 科技综合楼三层

305 会议室

Abstract:

A second order accurate, energy stable numerical scheme for the thin film model without slope selection is studied. The key difficulty is associated with the complicated form of the nonlinear term, which corresponds to a non-convex, non-concave energy functional. In turn, a direct application of a linear splitting approach leads to a first order accurate numerical scheme with energy stability. To improve the temporal accuracy while preserving the energy stability, one could apply either the implicit or explicit treatment for the nonlinear term. In the explicit approach, we need to add a Douglas-Dupont type regularization term to ensure the energy stability at a theoretical level. In addition, a great simplification is enjoyed in the computation effort for the resulting scheme, due to the fact that only a constant-coefficient linear solver is needed at each time step. Some numerical results are also presented.

欢迎大家参加！