数学与系统科学研究院

计算数学所网络学术报告

<u>报告人</u>: Dr. Qing Cheng

(Illinois Institute of Technology)

报告题目:

Flow dynamic approach and Lagrange multiplier approach for gradient flow

邀请人: 徐劼 博士

<u>报告时间</u>: 2020 年 9 月 11 日(周五) 上午 10:00-11:00

<u>报告工具</u>:腾讯会议(ID: 662 381 081) 会议链接:

https://meeting.tencent.com/s/Y3BuhiSwcp dM

Abstract:

In this talk, I will introduce a new Lagrangian approach-flow dynamic approach to effectively capture the interface for phase field models. Its main advantage, comparing with numerical methods in Eulerian coordinate is that thin interfaces can be effectively captured with few points in Lagrangian coordinate. Meanwhile I will also introduce the SAV and Lagrange multiplier approach which preserve energy dissipative and physical constraints for gradient systems in discrete level. The advantage of these methods only require solving linear equation with constant coefficients at each time step plus an additional nonlinear algebraic system which can be solved at negligible cost. Ample numerical results for phase field models are presented to validate the effectiveness and accuracy of the proposed numerical schemes.

欢迎大家参加!