

数学与系统科学研究院

计算数学所学术报告

报告人: **Associate Prof. Xiaofeng Yang**

(*Department of Mathematics, University of South Carolina, USA*)

报告题目:

**A novel numerical approach to solve
a class of nonlinear
thermodynamically consistent Model**

邀请人: 孙雅娟 研究员

报告时间: 2016 年 7 月 14 日 (周四)

下午 16:00-17:00

报告地点: 科技综合楼三层

311 报告厅

Abstract:

The nonlinear thermodynamically consistent model is usually derived from the variational approach of the free energy. Such modeling approach are commonly used in almost all physical passive system that satisfies the laws of thermo-mechanics. One of the main numerical challenges is about the development of the time marching scheme. We introduce a novel, so called Invariant Energy Quadratization approach, that can possess many desired properties. More precisely, the schemes

(i) are accurate (up to second order in time);
(ii) are stable (unconditional energy dissipation law holds); and iii) only need to solve a linear, symmetric positive definite system at each time step.

Short CV:

He finished his postdoc at University of North Carolina at Chapel Hill at 2009, and started the assistant professorship at University of South Carolina then. He is now a tenured associate professor of USC. His research is about the modeling, numerical analysis and simulations for nonlinear system, in particular the Complex fluids system. He published more than 50 peer reviewed journal papers and was invited to give more than 70 talks and seminars in many conferences, universities and institutes around the world. He is also the guest professor of university of sci and tech of china since 2003.

欢迎大家参加！