

数学与系统科学研究院

计算数学所学术报告

(定期学术报告)

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报告题目: **Some Recent Advances
in Multiphysical Modeling and
Computation**

报告时间: 2009年3月5日(周四)

下午 16:00—17:00

报告地点: 科技综合楼三层 311

计算数学所报告厅

Abstract: In order to truly link mesoscopic or even macroscopic phenomena to a detailed molecular description in light of a missing molecular-based, quantitative theory, requires the bridging of models

and simulation techniques across the huge range of length and associated time scales separating the atomic from the macroscopic world. One of the first breakthrough examples of multiscale modeling of materials was the linking of quantum and classical MD method with continuum methods to study crack propagation in silicon by Abraham. The main goal of materials science is the rapid and accurate prediction of properties of new materials before their development and manufacturing. Despite the advances made in modeling of the structural, mechanical, thermal, and transport properties of materials at the macroscopic level (FEM applied to complicated structures) there still remains considerable uncertainty about how to predict many properties of industrial interest. In this talk, I would like to introduce the recent advances in multiphysical modeling and computation of materials science in our group. It will involve discussing some problems on energy transport , electromagnetics and solid mechanics.

欢迎大家参加！