

数学与系统科学研究院

计算数学所学术报告

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报告题目:

**Using Cyber-Infrastructure for Dynamic
Data Driven Laser Treatment of Cancer**

邀请人: **徐国良研究员**

报告时间: **2007年5月24日(周四)**

上午 9:30-10:30

报告地点: **科技综合楼三层 311**

计算数学所报告厅

Abstract:

Hyperthermia based cancer treatments are used to increase the susceptibility of cancerous tissue to subsequent radiation or chemotherapy treatments, and in the case in which a tumor exists as a well-defined region, higher intensity heat sources may be used to ablate the tissue. Utilizing the guidance of real-time treatment data while applying a laser heat source has the potential to provide unprecedented control over the outcome of the treatment process. The goals of this work are to provide a working snapshot of the current system architecture developed to provide a real-time finite element solution of the problems of calibration, optimal heat source control, and goal-oriented error estimation applied the equations of bioheat transfer and demonstrate that current finite element technology, parallel computer architecture, peer-to-peer data transfer infrastructure, and thermal imaging modalities are capable of inducing a precise computer controlled temperature field within the biological domain.

欢迎大家参加！