

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Dan-Fu Han**

(*Department of Mathematics Zhejiang University, China*)

报告题目:

**A Two-Grid Algorithm Based on
Newton Iteration for the Stream
Function form of the Navier-Stokes
Equations**

邀请人: 白中治研究员

报告时间: **2011 年 5 月 11 日 (周三)**

上午 10: 40-11: 40

报告地点: **科技综合楼三层 311**

计算数学所报告厅

Abstract:

In this talk, we propose a two-grid algorithm for solving the stream function formulation of the stationary Navier-Stokes equations. The algorithm is constructed by reducing the original system to one small, nonlinear system on the coarse mesh space and two similar linear systems (with same stiffness matrix but different right-hand side) on the fine mesh space. The convergence analysis and error estimate of the algorithm are given for the case of conforming elements. Moreover, the algorithm produces a numerical solution with the optimal asymptotic H^2 -error. Finally, we give a numerical illustration to demonstrate the effectiveness of the two-grid algorithm for solving the Navier-Stokes equations. commented.

欢迎大家参加!