

数学与系统科学研究院

计算数学所学术报告

报告人: **Dr. Yunrong Zhu**

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报告题目:

**Convergence of a Goal-Oriented
Adaptive Finite Element Method for
Semilinear PDE**

邀请人: 张晨松 副研究员

报告时间: **2014年6月30日(周一)**

上午 10:00-11:00

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 develop convergence theory for a class of goal-oriented adaptive finite element (GOFEM) algorithms for second order semi-linear elliptic equations. One of the main challenges in the nonlinear problem that we don't see in the linear case is the dependence of the dual problem on the exact solution. As it is not practical to work with a dual problem we can not compute, we develop a practical adaptive algorithm in which the mesh refinement is driven both by residual-based estimator for the approximation of the primal solution, and in a sequence of approximate dual problems which relies only on the numerical solution obtained from the previous step. We show the contraction of the adaptive finite element algorithm. Numerical experiments support the theoretical results.

欢迎大家参加!