



## 复旦大学数学科学学院 数学综合报告会

报告题目：Optimal a posteriori estimators for the variable step-size BDF2 method for linear parabolic equations

报告人：王晚生（上海师范大学）

时间：2021-11-30 星期二 13:30-14:30

地点：腾讯会议 ID：265-275-677

报告摘要：

Optimal a posteriori error estimates for time discretizations of linear parabolic equations by the two-step backward differentiation formula (BDF2) method with variable step-sizes are derived. Based on second-order BDF reconstructions of the piecewise linear approximate solutions, the optimality of residual-based a posteriori error estimators is proved by using a novel stability inequality when the starting value is computed by the trapezoidal method. With a reasonable choice for the starting step-size, the optimality of the estimators when the starting value is computed by the backward Euler scheme can be also ensured. The effectiveness of the a posteriori error estimators is illustrated by a numerical example.

非线性数学模型与方法教育部重点实验室  
中法应用数学国际联合实验室  
上海市现代应用数学重点实验室  
复旦大学数学研究所