

数学与系统科学研究院
计算数学所网络学术报告

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报告题目:

**Jacobi-Davidson Method for Solving
Fractional Eigenvalue Problems**

邀请人: 白中治 研究员

报告时间: 2021 年 9 月 5 日 (周日)
上午 11:00-12:00

报告工具: 腾讯会议 ID: (132 539 726)

Abstract:

Fractional eigenvalue problems originate from fields such as fractal geometry, fractal dimension, and Brown motion. In this talk, we consider the first-order fractional eigenvalue problems, the difference scheme is given by the numerical approximation method based on piecewise linear interpolation of Caputo fractional derivative. The Jacobi-Davidson method for solving this problem is proposed. In order to solve the correction equation effectively, we construct the Strang circulant matrix as a preconditioner and propose the PGMRES method for solving it. The properties of eigenvalues of the preconditioned coefficient matrix are also analyzed. The numerical examples show that our method is effective.

欢迎大家参加！