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:

Efficient and accurate spectral methods for solving a class of fractional PDEs

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<u>报告时间</u>: 2015 年 6 月 12 日 (周五) 上午 10:00~11:00

<u>报告地点</u>: 科技综合楼三层 311 报告厅

Abstract:

We consider spectral approximations of PDEs with two-sided fractional derivatives. For the PDEs with Riesz derivatives, we construct spectral methods using special basis functions based on generalized Jacobi functions which lead to diagonal systems, and we derive rigorous error estimates which show that the convergence rate is of spectral type in properly weighted Sobolev spaces despite the fact that the solutions have singularities at the endpoints. For general PDEs with two-sided more fractional derivatives, we construct efficient spectral-element methods with geometric mesh to achieve spectral accuracy. We shall also discuss how to solve multi-dimensional fractional PDEs with spectral methods.

欢迎大家参加!