

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:

Error analysis of the anisotropic finite element methods for two-dimensional time fractional variable coefficient diffusion equations on graded meshes

邀请人: 唐贻发 研究员

报告时间: 2020 年 7 月 31 日 (周五)

上午 9:00-10:00

报告工具: 腾讯会议 (ID: 559 835 495)

会议链接:

<https://meeting.tencent.com/s/uMslc0Ay4wHs>

Abstract:

An unconditionally stable fully discrete numerical scheme for the two-dimensional (2D) time fractional variable coefficient diffusion equations with non-smooth solutions is constructed and analyzed. The L_2 - 1σ scheme is applied for the discretization of time fractional derivative on graded meshes and anisotropic finite element method (FEM) is employed for the spatial discretization. The unconditional stability and convergence of the proposed scheme is proved rigorously. It is shown that the order $O(h^{2+N^{-\min\{r\alpha, 2\}}})$ can be achieved, where h is the spatial step, N is the number of partition in temporal direction, r is the temporal meshes grading parameter and α is the order of fractional derivative. A numerical example is provided to verify the sharpness of our error analysis.

欢迎大家参加！