数学与系统科学研究院

计算数学所学术报告

报告人：　Prof. R.K. Mohanty

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报告题目：

On the stability of high accuracy FDMs for second order 2D hyperbolic equations with significant first derivative terms

邀请人：　袁礼　研究员

报告时间：2019 年 7 月 9 日（周二）

上午 10:00-11:00

报告地点：　　数学院南楼二层

202 教室

Abstract:

We discuss, stability analysis of two new three-level implicit FDMs of order two in time and four in space for the differential equations $utt=urr+uzz+(1r)ur+f(r,z,t),0<r,z<1,t>0$ and $utt+2\alpha ut+\beta 2u=uxx+uyy+f(x,y,t),\alpha>\beta \geqslant 0,0<x,y<1,t>0$. The method is stable for all choices of mesh ratio parameter and applicable to solve hyperbolic equations with singular coefficients. In the analysis, single compact cell and alternating direction at the advanced time level. We do not require any iterative technique to solve the problem. In all cases, we require only a tri-diagonal solver to compute the problem at each advanced time level. We have also discussed an explicit scheme of order two in time for the numerical solution of u at first time level which is also applicable to solve singular problems.

欢迎大家参加！