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： **Algebra Solvers with Their Applications to Radiative MHD**

邀请人： 白中治研究员

报告时间： **2008 年 3 月 21 日(周五)**

上午 10:30—11:30

报告地点： 科技综合楼三层 311

计算数学所报告厅

Abstract：

Large-scale scientific and Engineering Computing, such as Radiative MHD, CFD, particle transportation, and etc., often introduces large sparse linear systems. These systems are time-consuming in the numerical simulations and even take more than eighty percentages in total CPU time. Therefore, high efficient parallel solution of linear systems plays a key role to improve the whole efficiency of numerical simulations.

In this talk, we first introduce briefly the basic PDEs from our radiative MHD with their discretization. Then we show a kind of Krylov subspace method proposed by us, which named BiCRSTAB (Stabilized Bi-Conjugate Residual) method. After the analysis and some numerical examples of the BiCRSTAB method, we pay attention to how to improve the parallel performance and the scalability of our method and give a theory analysis based on our new mathematics models. Some parallel numerical examples and results in radiative MHD are also shown on.

欢迎大家参加！