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： High–Order Krylov Deferred Correction Symplectic Methods for Hamiltonian Systems

邀请人： 唐贻发研究员

报告时间： 2007 年 5 月 24 日(周四)

下午 4:00—5:00

报告地点： 科技综合楼三层 311

计算数学所报告厅

Abstract：

In this talk, a new framework for the construction of efficient numerical methods for Hamiltonian systems

is presented. The methods use Gauss nodes, then are symplectic. Spectral deferred correction techniques are then applied to the discretized equations as preconditioners and the resulting preconditioned nonlinear system is solved efficiently using Newton-Krylov schemes such as the Newton-GMRES method. These Krylov deferred correction Gauss methods can be of arbitrary order of accuracy, unconditionally stable, symplectic and symmetric. Preliminary numerical results show that these new methods are very competitive with existing geometric time integrators, particularly when high precision is desired.

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