

数学与系统科学研究院

计算数学所学术报告

报告人: 曹阳 副教授

(南通大学交通学院)

报告题目:

**Deteriorated PSS-based
preconditioners for generalized
saddle point problems with
applications to Navier-Stokes
equations**

邀请人: 白中治 研究员

报告时间: 2016 年 8 月 13 日 (周六)

上午 10:00-11:00

报告地点: 科技综合楼三层

311 报告厅

Abstract:

In this talk, we discuss the deteriorated positive-definite and skew-Hermitian splitting (DPSS)-based preconditioners for generalized saddle point problems. Two new improved variants of the DPSS preconditioner will be presented. The new preconditioners are not only better approximations to the generalized saddle point matrix than the DPSS preconditioner, but also easier to implement than the DPSS preconditioner. Theoretical analyses show that the corresponding splitting iteration methods are also convergent unconditionally. The quasi-optimal choices and practical estimations of the iteration parameters are discussed. Moreover, eigenproperties of the preconditioned matrices are described and upper bounds of the degree of the minimal polynomial of the preconditioned matrices are obtained. Finally, numerical experiments arising from the discretization of a model Navier-Stokes equation are presented to show the efficiency of the proposed preconditioners.

欢迎大家参加！