# 数学与系统科学研究院

## 计算数学所学术报告

报告人：　　**Prof. Chen Greif**

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报告题目：

**Iterative Solution of Saddle Point Linear Systems**

邀请人：　　白中治研究员

报告时间：**2010** 年 **5** 月 **17** 日（周一）

上午 **10：00～11：00**

报告地点：　　科技综合楼 **311**

计算数学所报告厅

## Abstract:

**Saddle point systems arise in a variety of applications, and in particular, in constrained optimization problems and discretized elliptic partial differential equations with divergence-free constraints. Iterative solvers can rapidly converge to the solution if the system is preconditioned effectively. Finding a good preconditioner may strongly depend on the properties of the underlying continuous problem.**

**In this talk I will give an overview of iterative solution methods for saddle point problems, with focus on block diagonal preconditioners. Solution approaches that involve approximating Schur complements are discussed, and specifically, the spectral properties of primal Schur complements, in situations where the leading block of the saddle point matrix is singular. The analytical findings are illustrated by a few numerical examples.**


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