

数学与系统科学研究院

计算数学所学术报告

报告人: 胡凯博 博士

( 北京大学数学科学学院 )

报告题目:

**Structure-preserving discretizations  
and robust preconditioners for MHD  
systems**

邀请人: 龚伟 副研究员

报告时间: 2017 年 7 月 17 日 (周一)

下午 14:30-16:30

报告地点: 科技综合楼三层

311 报告厅

## Abstract:

We present some structure-preserving and energy-stable finite element methods for solving incompressible magnetohydrodynamics (MHD) systems. The magnetic Gauss's law ( $\text{div } \mathbf{B} = 0$ ) is precisely preserved on the discrete level by means of appropriate mixed formulations and appropriate finite element spaces for various physical variables. Based on mathematical structures of the MHD system, we design block diagonal and triangular preconditioners which are robust with physical and discretization parameters.

欢迎大家参加！