# 数学与系统科学研究院

# 计算数学所学术报告

**报告人**：Assistant Prof. Xuemin Tu

（ *the department of Mathematics, University of Kansas* ）

**报告题目**：

# FETI-DP Domain Decomposition Methods for Incompressible Stokes Equation

**邀请人**： 张硕 博士

**报告时间**：2015 年 8 月 17 日（周一）

下午 16:00~17:00

**报告地点**： 科技综合楼三层

311 报告厅

# Abstract：

A unified framework of FETI-DP algorithms is proposed for solving the system of linear equations arising from the mixed finite element approximation of incompressible Stokes equations. Several previously developed FETI-DP algorithms can be represented under this framework. Their condition number estimates are also simplified using this framework. A distinctive feature of this framework is that both continuous and discontinuous pressures can be used in the finite element space, while previous FETI-DP algorithms are valid only for the case of using discontinuous pressures. Both lumped and Dirichlet type preconditioners are analyzed and scalable convergence rates are proved. Numerical experiments demonstrate the performances of the discussed FETI-DP algorithms represented by the same framework.

Short cv: Xuemin Tu is currently an assistant professor in the department of Mathematics, University of Kansas. She received her Ph.D. from Courant Institute of Mathematical Sciences, New York University in 2006. Before she joined University of Kansas, she was a Morrey Assistant Professor in the department of mathematics, University of California, Berkeley and postdoc at Lawrence Berkeley National Laboratory. Her research interests include scientific computing and numerical analysis. She currently works on data assimilation, uncertainty quantification, and domain decomposition methods.

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