数学与系统科学研究院

计算数学所学术报告

报告人：　**Dr. Weiping Bu**

（ *School of Mathematics and Computational Science, Xiangtan University* ）

报告题目：

Galerkin finite element method for Riesz fractional differential equation based on unstructured meshes

邀请人：　唐贻发 研究员

报告时间：**2017** 年 **6** 月 **18** 日（周日）

上午 **10:00-11:00**

报告地点：　数学院南楼七层

702 教室

Abstract:

We develop Galerkin finite element method for two-dimensional Riesz fractional differential equations, subject to Dirichlet boundary conditions. We employ the standard linear Lagrange piecewise polynomials as the trial functions and test functions. Based on triangle unstructured meshes, the implementation of finite element method for fractional differential equations are described in detail. Comparing with the existing methods, our method efficiently reduces the computational cost and increases the accuracy of the stiffness matrix. We consider smooth solutions and weakly singular source f (x, y) to verify our method. Finally, we also investigate singular solutions which often occur in fractional differential equations, and use the adaptive algorithm to deal with this case.

欢迎大家参加！