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 Comptational Science,

Xiangtan University ）

报告题目：

Finite difference/finite element methods for distributed-order time fractional diffusion equations

邀请人： 唐贻发 研究员

报告时间：2016 年 7 月 27 日（周三）

上午 **9:30-10:30**

报告地点： 数学院南楼七层

702 会议室

Abstract：

In this paper, a class of distributed-order time fractional diffusion equations (DOFDEs)on bounded domains is considered. By L1 method in temporal direction, a semi-discretevariational formulation of DOFDEs is obtained firstly. The stability and convergence ofthis semi-discrete scheme are discussed, and the corresponding fully discrete finite elementscheme is investigated. To improve the convergence rate in time, Deng's WSGD methodis used. By this method, another finite element scheme for DOFDEs is obtained, and thecorresponding stability and convergence are considered. And then, as a supplement, ahigher order finite difference scheme of Caputo fractional derivative is developed. By thisscheme, a novel fully discrete finite element scheme for DOFDEs is obtained. Finally,some numerical examples are given for verification of our theoretical analysis.

欢迎大家参加！