

数学与系统科学研究院

计算数学所博士后定期学术报告

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报告题目:

**Weak Galerkin Methods and Their
Applications**

报告时间: **2019 年 11 月 13 日 (周三)**

下午 16:00-17:00

报告地点: **科技综合楼三层**

311 报告厅

Abstract:

The weak Galerkin finite element method (WGFEM) is a recently developed numerical method for partial differential equations (PDEs). It is regarded as an extension and development of the standard finite element method. Compared with the standard method, similarly, WGFEM aims to discretize the spatial domain of the problem, and then approximate infinite-dimensional spaces of the problem with the use of piecewise defined polynomial function spaces. However, WGFEM introduces the concepts of weak functions and weak differential operators on weak functions. The key to WGFEM is to utilize weak differential operators in place of standard differential operators (such as gradient, divergence, curl and Laplace operators, etc.) in the variational form of the problem. In this talk, the speaker will firstly discuss the basic framework of the weak Galerkin method by taking Poisson equations as an example, and will then apply the ideas of the method to other PDEs, such as heat equations, biharmonic problems and nonlinear poroelasticity problems.

欢迎大家参加！