数学与系统科学研究院

计算数学所学术报告

报告人： 江山

（ 南通大学 ）

报告题目：

Multiscale simulation for singular perturbation with small parameters and for flow problem

邀请人： 戴小英 研究员

报告时间：**2019** 年 **7** 月 **4** 日（周四）

上午 **10:00-11:00**

报告地点： 数学院南楼二层

205 教室

Abstract：

We propose a reduced multiscale finite element method for a 1D convection- diffusion problem with a Robin boundary condition. The small perturbed parameters would cause boundary layer oscillations, so we apply several adapted grids to recover the defects. For a 2D singularly perturbed problem an adapted Petrov-Galerkin multiscale method is presented, the multiscale basis functions are constructed from both homogeneous and nonhomogeneous localized problems, which provides more flexibility and removes the resonance effect. After that, a multiscale eigenvalue computation is applied to the flow equation. It is realized via a spectral decomposition from the dominant eigenvalues, that is used for an enrichment of multiscale bases to improve its efficiency.

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