

# 数学与系统科学研究院

## 计算数学所学术报告

报告人: 江雪 博士

(北京邮电大学理学院)

报告题目:

**An Adaptive Finite Element PML Method  
for the Acoustic-Elastic Interaction in  
Three Dimensions**

邀请人: 龚伟副研究员

报告时间: 2017 年 11 月 29 日 (周 三)

下午 15:00--16:00

报告地点: 数学院南楼二层

224 教室

报告摘要:

Consider the scattering of a time-harmonic

**acoustic incident wave by a bounded, penetrable, and isotropic elastic solid, which is immersed in a homogeneous compressible air or fluid. The paper concerns the numerical solution for such an acoustic-elastic interaction problem in three dimensions. An exact transparent boundary condition (TBC) is developed to reduce the problem equivalently into a boundary value problem in a bounded domain. The perfectly matched layer (PML) technique is adopted to truncate the unbounded physical domain into a bounded computational domain. The well-posedness and exponential convergence of the solution are established for the truncated PML problem by using a PML equivalent TBC. An a posteriori error estimate based adaptive finite element method is developed to solve the scattering problem. Numerical experiments are included to demonstrate the competitive behavior of the proposed method.**

**欢迎大家参加！**