

数学与系统科学研究院

计算数学所学术报告

报告人: Prof. Marcus Grote

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报告题目:

**NONREFLECTING BOUNDARY CON  
DITIONS FOR MULTIPLE SCATTER  
ING PROBLEMS**

邀请人: 陈志明研究员

报告时间: 2008年6月16日(周一)

上午 10:00—11:00

报告地点: 科技综合楼三层 311

计算数学所报告厅

Abstract:

The accurate and reliable simulation of wave phenomena is

**of fundamental importance in a wide range of engineering applications such as fiber optics, wireless communication, sonar and radar technology, non-invasive testing, ultrasound imaging, and optical microscopy.**

**For problems set in an unbounded domain, an artificial boundary is required to confine the region of interest to a finite computational domain. Then a nonreflecting boundary condition is required at the artificial boundary, which avoids spurious reflections from it. When a scatterer consists of several components, the use of a single artificial boundary to enclose the entire region of interest becomes too expensive. Instead, it is preferable to embed each component of the scatterer in a separate sub-domain. As waves may bounce back and forth between domains, they are no longer purely outgoing outside the computational domain, so that most standard approaches cannot be used. To overcome this difficulty, we show how to devise exact nonreflecting boundary conditions for multiple scattering problems, which avoid spurious reflections from the artificial boundary.**

**欢迎大家参加！**