

数学与系统科学研究院

计算数学所学术报告

报告人: **Associate Prof. Xue Jiang**

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报告题目:

**The elastic wave scattering by
biperiodic structures**

邀请人: 郑伟英 研究员

报告时间: **2019 年 12 月 14 日(周六)**

下午 16:00-17:00

报告地点: 数学院南楼七层

702 教室

Abstract:

In this work, we consider the elastic wave scattering of a time-harmonic plane wave by a biperiodic rigid surface, where the wave propagation is governed by the three-dimensional Navier equation. An exact transparent boundary condition is developed to reduce the scattering 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 developing a PML equivalent transparent boundary condition. The proofs rely on a careful study of the error between the two transparent boundary operators. The work significantly extends the results from one-dimensional periodic structures to two-dimensional biperiodic structures. Numerical experiments are included to demonstrate the competitive behavior of the proposed method.

欢迎大家参加！