数学与系统科学研究院

计算数学所定期学术报告

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报告题目：

The Reverse Time Migration Method for Half-Space Elastic Inverse Scattering Problems

报告时间：**2019 年 9 月 12 日（周四）**

下午 16:00-17:00

报告地点： 数学院南楼二层

204 教室

Abstract：

The reverse time migration (RTM) or the closely related prestack depth migration methods are nowadays widely used in exploration geophysics. It is originated in the simple setting of the exploding reflector model. For imaging the complex medium in practical applications, the analysis of the migration method is usually based on the high frequency assumption, so that the geometric optics approximation can be used. We report our recent efforts in establishing new mathematical understanding of the RTM method without geometric optics assumption for inverse scattering problems. Our resolution analysis, which applies in both penetrable and non-penetrable obstacles with sound soft or impedance boundary condition on the boundary of the obstacle, implies that the RTM imaging functional always peaks on the boundary of the scatterers. This new mathematical understanding leads to several new direct imaging algorithms including: imaging for electromagnetic objects, imaging in half-space acoustics, imaging in closed waveguide, and imaging for scattering data without phase information. In this talk we will report the ideas of the RTM method and our recent result for imaging extended scatterers in the half-space using only elastic scattering data. This talk is based on joint works with Junqing Chen, Guanghui Huang and Shiqi Zhou.

欢迎大家参加！