



偏微分方程及其应用中心

学术报告

报告题目: Direct sampling method to inverse wave-number-dependent source problems: determination of the support of a stationary source

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地点: 数学院南楼 202

摘要: This talk is concerned with a direct sampling method for imaging the support of a frequency-dependent source term embedded in a homogeneous and isotropic medium. The source term is given by the Fourier transform of a time-dependent source whose radiating period in the time domain is known. The time-dependent source is supposed to be stationary. Via a multi-frequency direct sampling method, we show that the smallest strip containing the source support and perpendicular to the observation direction can be recovered from far-field patterns at a fixed observation angle. With multiple but discrete observation directions, the shape of the convex hull of the source support can be recovered. We even extend the proposed algorithm to the case of near-field data in three dimensions. Numerical experiments in both two and three dimensions have proved our theoretical findings. This talk is based on a joint work with Guanghui Hu and Hongxia Guo.