计算数学所学术报告

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报告题目：

Inverse electromagnetic diffraction by biperiodic dielectric gratings

邀请人： 龚伟副研究员

报告时间：2017 年 12 月 6 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 incidence of a time-harmonic electromagnetic plane wave onto a biperiodic

dielectric grating, where the surface is assumed to be a small and smooth perturbation of a plane. The diffraction is modeled as a transmission problem for Maxwell's equations in three dimensions. This paper concerns the inverse diffraction problem which is to reconstruct the grating surface from either the diffracted field or the transmitted field. A novel approach is developed to solve the challenging nonlinear and ill-posed inverse problem. The method requires only a single incident field and is realized via the fast Fourier transform. Numerical results show that it is simple, fast, and stable to reconstruct biperiodic dielectric grating surfaces with super-resolved resolution.