应用数学讲座

Научный Семинар по Прикладной Математике

Research Seminar on Applied Mathematics

应用数学报告（55）

报告人 / Докладчик / Speaker: 郭玉坤 教授 (哈尔滨工业大学)

题 目 / Название / Title: Solving inverse scattering problems by the Fourier-Bessel expansion and direct imaging

时间 / Время / Time：23 Jul. 2022, 16:50-17:20

地点 / Место / Venue: 图书馆1楼报告厅

摘要 / Аннотация / Abstract:

This talk is concerned with the inverse acoustic scattering problems by an obstacle or a cavity with a sound-soft or a sound-hard boundary. A direct imaging method relying on the boundary conditions will be proposed for reconstructing the shape of the obstacle or cavity. First, the scattered fields are approximated by the Fourier-Bessel functions with the measurements on a closed curve. Then, the indicator functions are established by the superpositions of the total fields or their derivatives to the incident point sources. We prove that the indicator functions vanish only on the boundary of the obstacle or cavity. Numerical examples will also be presented to demonstrate the effectiveness of the method.