应用数学讲座

Научный Семинар по Прикладной Математике

Research Seminar on Applied Mathematics

应用数学报告（17）

报告人 / Докладчик / Speaker:
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题目 / Название / Title:
Determining a random Schroedinger equation with unknown source and potential

时间 / Время / Time：18 May 2021, 13:30-14:30

地点 / Место / Venue: Main Building, Room 336

摘要 / Аннотация / Abstract:

This talk studies the direct and inverse scattering problem associated with a time-harmonic random Schroedinger equation with a Gaussian white noise source term. We establish the well-posedness of the direct scattering problem and obtain three uniqueness results in determining the variance of the source term, the potential and the mean of the source term, sequentially, by the corresponding far-field measurements. The first one shows that a single realization of the passive scattering measurement can uniquely recover the variance of the source term, without knowing the other two unknowns. The second shows that if active scattering measurement is further used, then a single realization can uniquely recover the potential function without knowing the source term. The last one shows that if full measurements are used, then both the potential and the random source can be uniquely recovered.

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