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Inverse scattering with spherical incident waves. (English) [Zbl 0942.35038](#)

DeSanto, John A. (ed.), Mathematical and numerical aspects of wave propagation. Proceedings of the 4th international conference held at Mines in Golden, CO, USA, June 1-5, 1998. Philadelphia, PA: SIAM. Proc. Appl. Math. 502-504 (1998).

Summary: In this paper we present the inverse scattering obstacle problem considering incident spherical waves. The incident spherical waves have a source set outside the obstacle zone. Density theorems are obtained for these type of incident waves and some kind of source sets. The uniqueness for the inverse obstacle problem is proved in this framework and some other relations are obtained. Namely, a reciprocity relation and a relation with the scattering cross section.

For the entire collection see [\[Zbl 0904.00054\]](#).

MSC:

- [35C15](#) Integral representations of solutions to PDEs
- [78A46](#) Inverse problems (including inverse scattering) in optics and electromagnetic theory
- [35J05](#) Laplace operator, Helmholtz equation (reduced wave equation), Poisson equation
- [35A05](#) General existence and uniqueness theorems (PDE) (MSC2000)

Cited in **5** Documents

Keywords:

[obstacle problem](#); [incident spherical waves](#)