

**Zhang, Huan; Liu, Lihan**

**The decomposition method for an interior inverse scattering problem with a Neumann boundary condition.** (Chinese. English summary) [Zbl 07448197](#)

*Acta Sci. Nat. Univ. Sunyatseni* 60, No. 4, 170-176 (2021)

Summary: An internal acoustic inverse scattering problem with a Neumann boundary condition is studied by using the decomposition method. First, it is proved that the position and shape of a scatterer can be uniquely determined by the measurement data of the point source inside the cavity with the Neumann boundary condition. Then, the boundary of the unknown scatterer and its shape is reconstructed by using the idea of the decomposition method. Finally, two numerical examples are given to verify the feasibility and effectiveness of the method.

**MSC:**

74J20 Wave scattering in solid mechanics

74J25 Inverse problems for waves in solid mechanics

**Keywords:**

interior inverse scattering problem; Neumann boundary condition; decomposition method

**Full Text:** [DOI](#)