

An introduction to some new methods for inverse scattering problems ✕

Prof. Dr. Roland Potthast
University of Göttingen, Germany

We give an introduction to recent probe methods and tests which can be used to deduce knowledge about some unknown scatterer from knowledge of the scattered wave far from the scatterer or its far field pattern. In particular, we explain the main ideas behind the singular sources method (Potthast), the probe method (Ikehata), the no-response test (Luke-Potthast) and the range test (Potthast, Sylvester and Kusiak). Numerical results in two and three dimensions by Erhard, Schulz, Kühn and Potthast will be shown for several applications from acoustic and electromagnetic scattering theory, impedance tomography and magnetic tomography.