Non-radiating Sources, Transmission Eigenvalues, and the Born Approximation

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Abstract

A non-radiating source radiates no far field. A transmission eigenvalue is a wavenumber at which a scattering operator (for the Helmholtz equation an an inhomogeneous medium) has a nontrivial kernel. We discuss the relationship between the two and give some results concerning existence and non-existence of transmission eigenvalues, both for the scattering operator and its Born approximation.