The factorization method for interfaces with selfadjoint boundary conditions

Andrea Mantile

Université de Reims Champagne Ardenne
andrea.mantile@univ-reims.fr

Abstract

We consider the classical wave scattering from an interface with selfadjoint boundary conditions. Our approach consists in defining the corresponding self-adjoint model as a singular perturbation of the "free" Laplacian. This provide a generalized framework for the factorization method allowing to reconstruct different types of obstacles from scattering data. Under suitable conditions on the Weyl's function of the scattering couple, we provide an algorithm for the reconstruction of the interface from the knowledge of the scattering amplitude at a fixed frequency. As applications, the cases of delta and delta' transmission conditions are considered. (joint work with A. Posilicano).