

An over-determined boundary problem for the Helmholtz equation in a semiinfinite domain with a curvilinear boundary

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Abstract

In this paper we consider an over-determined Cauchy problem for the Helmholtz equation in a semiinfinite domain with a piecewise smooth curvilinear boundary. Applying the Fourier transform method in the space of distributions of slow growth, we establish the necessary and sufficient solvability conditions which connect the boundary functions. We construct integral representations of a solution. © 2010 Allerton Press, Inc.

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Keywords

Fourier transform, Helmholtz equation, Over-determined Cauchy problem, Space of distributions of slow growth