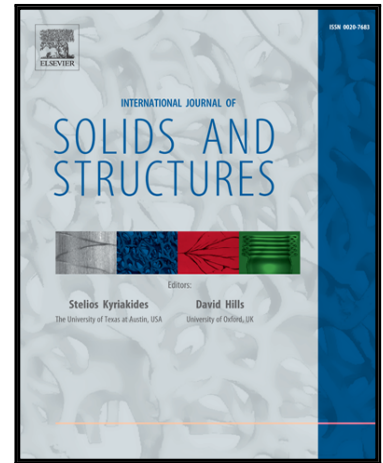


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Terumi Touhei

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Inversion of point-like scatterers in an elastic half-space by the application of the far-field properties of the Green's function to the near-field operator

Terumi Touhei *

Abstract

This article presents a method for reconstruction of the locations of point-like scatterers in an elastic half-space. The key point of the formulation is to introduce the far-field properties of the Green's function into the near field equation by means of pseudo projections, which are defined in this article. An indicator function that reconstructs the locations of the point-like scatterers was defined based on the derived operator. Numerical calculations were carried out to verify the accuracy of the pseudo-projection method. We also examined the effects of random noise, the grid resolution at the free surface, and the analyzed frequency on the accuracy of the reconstruction of scatterer locations.

Key words: inverse scattering problem, point-like scatterers, elastic half-space, far-field properties of Green's function, near-field equation, pseudo projections

*Dept. of Civil Engineering, Tokyo University of Science, 2641 Yamazaki, Noda 278-8510, Japan
e-mail touhei@rs.noda.tus.ac.jp

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