

## Elastic wave propagation through a layer with graded-index distribution of density

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### Abstract

In this study, we investigated a one-dimensional diffraction problem of elastic wave propagation through gradient layer. The diffraction problem is reduced to an ordinary differential equation with the third type boundary conditions. The method of approximation of integral identities is applied to increase accuracy of the grid solution to the obtained boundary problem. The case when the elastic wave speed in the layer is constant and density changes continuously according to  $\rho_0(1+A\sin Bx)$  is considered in the paper. © 2012 IEEE.

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