Influence of heterogeneity of the character fixing the border on the spread of two-dimensional waves

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Abstract: In this study planar elastic isotropic medium with rectangular cross section of finite size is considered. At the initial time, on the front border of the rectangular area, absolute rigid body having speed is impinged. Lateral sides of the rectangular area are free from stress. On the lower boundary inhomogeneous boundary conditions when the plane deformation problem has been solved numerically using the method spatial characteristics [1-4] are given. We have developed a numerical algorithm for the calculation of stress and displacement velocity at points of discontinuity of the boundary conditions that are special because of the abrupt change in the boundary conditions. Results of the study in its final form are brought to the numerical solution.

Keywords: isotropic medium, plane strain, a singular point, wave processes, numerical algorithm.

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