Elastic Field of a Dilatational Cylindrical Inclusion in an Elastically Isotropic Half-Space

T. Nguyen Van

[1] ITMO University, Saint-Petersburg, Russia, 191187

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Abstract. In this article, a new solution to the elasticity boundary-value problem for a dilatational cylindrical inclusion embedded in an elastically isotropic half-space is presented. To solve this problem, the results for the infinitesimally thin dilatational disk in an elastically isotropic half-space, are explored. For displacements, strains, and stresses of a dilatational cylindrical inclusion, the analytical expressions are obtained with Lipschitz-Hankel integrals. The comparison of the found solution with previously known one, is given.

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