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SOLVABILITY AND ASYMPTOTICS OF SOLUTIONS OF CRACK-TYPE BOUNDARY-CONTACT DYNAMIC PROBLEMS OF ELASTICITY THEORY

The present paper is devoted to the investigation of solvability and complete asymptotics of solutions of boundary-contact dynamic problems with cracks of elasticity theory for homogeneous anisotropic media.

Theorems of the existence and uniqueness of solutions of these boundary-contact problems are obtained by using the potential theory, Laplace transform and the general theory of pseudodifferential equations on manifold with boundary.

The complete asymptotics are studied in near the contact boundaries. The properties of exponents of the first terms of asymptotic expansion of solutions of the above-mentioned problems are established and effective formulas for their calculation are found. In particular, we have found a class of bodies when the oscillation in the expansion vanishes and hence the asymptotic expansion of solutions describes a real physical process.