METHOD OF APPROXIMATE SOLUTION OF ANTIPLANE PROBLEMS OF ELASTICITY THEORY FOR COMPOSITE BODIES WEAKNED BY CRACKS

Study of boundary value problems for the composite bodies weakened by cracks has a great practical significance. Mathematical model investigated boundary value problems for the composite bodies weakened by cracks in the first approximation can be based on the equations of anti-plane approch of elasticity theory for composite (piece-wise homogeneous) bodies. When cracks intersect an interface or penetrate it at all sorts of angle on the base of the integral equations method is studied in the works. In the present article finite-difference solution of anti-plane problems of elasticity theory for composite (piece-wise homogeneous) bodies weakened by cracks is presented. The differential equation with corresponding initial boundary conditions is approximated by finite-differential analogies in the rectangular quadratic area. Such kind set of the problem gives opportunity to find directly numeral values of shift functions in the grid points. The suggested calculation algorithms have been tested for the concrete practical tasks. The results of numerical calculations are in a good degree of approach with the results of theoretical investigations.