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INVESTIGATION OF A LINEAR BOUNDARY VALUE PROBLEM FOR A COMPOSITE TYPE TWO-DIMENSIONAL DIFFERENTIAL EQUATION OF THIRD ORDER WITH GENERAL BOUNDARY CONDITIONS

Abstract

The boundary value problem is considered for the linear, two-dimensional, integro-differential, composite type loaded third order equation with non-local and global terms in the boundary conditions. The principal part of the equation is a derivative with respect to variable x_2 from two-dimensional Laplace equation. Taking into account ill-posedness of boundary value problems for hyperbolic differential equations, the principal parts of boundary conditions are chosen in the special form dictated by the obtained necessary conditions. These conditions are such that each solution of the considered equation determined in the considered domain satisfies these conditions.