The Method of Separation of Variables for Nonlocal Contact Problem for Some Stationary Linear Partial Differential Equations

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In the present report, the factorized difference scheme for two-dimensional mixed-derivative hyperbolic equations with variable coefficients is considered. Using the method of regularization, the absolutely stable factorized scheme is constructed. A convergence of the scheme is proved in

$$\overset{0}{W}_2^{(1)}$$

space. For the solution of the difference scheme is constructed a parallel algorithm. The results are applied for two-dimensional system of equations of Elasticity Theory and the corresponding factorized schemes are constructed. In terms of the number of arithmetic operations, these schemes represent economic difference schemes.