On a nonlocal boundary value problem for mixed type equation

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In this study, the mixed parabolic-hyperbolic type equation with the initial and integral boundary conditions are examined in the rectangular domain. In [1]-[4], the mixed type equations have many interesting applications in gas dynamics, electromagnetic movement of liquid and similar non-homogeneous processes. The integral boundary conditions show that physical process is not only at the point but also at the whole object. In this study, the existence, uniqueness and stability problems of the solution of the mixed type boundary problem are discussed. These problems are generally solved using the maximum principle or integral equations for mixed type boundary problems. However, the methods of spectral analysis are applied in this study.

References

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