On the source identification problem for hyperbolic-parabolic equation with nonlocal conditions

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Abstract: Various source identification problems for hyperbolic-parabolic equations and their applications have been investigated in [1]-[3]. In the present paper, a source identification problem for hyperbolic-parabolic equation with nonlocal conditions is studied. Stability estimates for the differential equation of the source identification hyperbolic-parabolic problem are established. Furthermore, stability estimates for the difference scheme of the source identification hyperbolic-parabolic problem are presented.

References

[1] A. Ashyralyev, M.A. Ashyralyyeva, On source identification problem for a hyperbolic-parabolic equation, Contemporary Analysis and Applied Mathematics, vol. 3, no 1, 88–103, 2015.

[2] M.A. Ashyralyyeva, A. Ashyralyyev, Stable difference scheme for the solution of the source identification problem for hyperbolic-parabolic equations, AIP Conference Proceedings, vol. 1676, Article Number 020024, 2015.

[3] M.A. Ashyralyyeva, M. Ashyraliyev, On the numerical solution of identification hyperbolic-parabolic problems with the Neumann boundary condition, Bulletin of the Karaganda University-Mathematics, vol. 91, no 3, 69–74, 2018.