Boundary value problem for loaded parabolic equations of fractional order

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Abstract. The article considers the second boundary value problem for a loaded parabolic equation with a fractional Riemann – Liouville integro-differentiation operator. The unambiguous solvability of the second boundary value problem is proved. Using the Green function method with the theory of the potential of a simple layer, the problem is reduced to a system of Volterra integral equations of the second kind.

Keywords: boundary value problems, parabolic equations, fractional integro-differentiation operator, loaded equation, regular solution

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