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## ON THE UNIQUENESS OF THE SOLUTION TO THE INVERSE BOUNDARY VALUE PROBLEM FOR THE HEAT EQUATION ON A FINITE TIME INTERVAL

V. P. Tanana

This work is devoted to proving the uniqueness of the solution to the inverse boundary value problem of heat conduction on a finite time interval. For these purposes, the original problem is extended to an infinite time interval, and then the Fourier transform in time is applied to the new problem. As a result, the problem is reduced to a system of ordinary differential equations, which is solved explicitly. A uniqueness theorem is proved for the inverse boundary value problem in Fourier images.

Keywords: inverse heat conduction problem, Fourier transform, ill-posed problem.

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Vitalii Pavlovich Tanana, Dr. Phys.-Math. Sci., Prof., South Ural State University, Chelyabinsk, 454080 Russia, e-mail: tananavp@susu.ru.

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