

This article presents a numerical solution to the inverse problems of simultaneous determination of the time-dependent coefficients and the source term in the parabolic heat equation subject to overspecified conditions of integral type. The ill-posed problems are numerically discretized using the finite-difference method. The resulting system of nonlinear equations is solved numerically using the MATLAB toolbox routine *lsqnonlin* applied to minimizing the nonlinear Tikhonov regularization functional subject to simple physical bounds on the variables. Numerical examples are presented to illustrate the accuracy and stability of the solution.