

General Boundary-Value Problem for Nonuniformly Parabolic Equations with Power Singularities

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We investigate a general boundary-value problem for nonuniformly $\vec{2}b$ -parabolic equations with degeneration. The coefficients of parabolic equations and boundary conditions admit power singularities of any order in any variables on a certain set of points. By using *a priori* estimates and the Arzelà and Riesz theorems, we establish the existence and integral representation for the unique solution of the formulated boundary-value problems. The estimates of the solution of the general parabolic boundary-value problem and its derivatives in Hölder spaces with power weight are obtained. The order of the power weight is determined via the values of the orders of power singularities and degenerations of the coefficients of $\vec{2}b$ -parabolic equations and boundary conditions.

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