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

Published: 27 June 2024

Volume 282, pages 735–750, (2024) Cite this article

Journal of Mathematical Sciences

Aims and scope →

Submit manuscript →

I. P. Luste & I. D. Pukal's'kyi

We're sorry, something doesn't seem to be working properly.
Please try refreshing the page. If that doesn't work, please contact support so we can address the problem.

We investigate a general boundary-value problem for nonuniformly $\overrightarrow{2b}$ -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 $\overrightarrow{2b}$ -parabolic equations and boundary conditions.

About this article

Cite this article

Luste, I.P., Pukal's'kyi, I.D. General Boundary-Value Problem for Nonuniformly Parabolic Equations with Power Singularities. *J Math Sci* **282**, 735–750 (2024).
https://doi.org/10.1007/s10958-024-07212-y

Download citation

Received	Published	Issue Date
15 February 2022	27 June 2024	July 2024

DOI
https://doi.org/10.1007/s10958-024-07212-y

Keywords

$\overrightarrow{2b}$-parabolic equations · power singularities · interpolation inequalities · *a priori* estimates · Hölder spaces · Stieltjes integral