

*Uniqueness of Solutions of the Initial Value Problem for Parabolic Systems of Differential Equations**

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1. Introduction. The initial value problem for the equation of heat conduction has been studied extensively by several authors, and a well developed theory can be found in the literature (see ROSENBLUM [12] for a survey of results and bibliography). Of particular interest to us is the following theorem proved by TИHONOV [14]. If $u = u(x, y)$ is a solution of

$$\sum_{i=1}^n \frac{\partial^2 u}{\partial x_i^2} - \frac{\partial u}{\partial y} = 0 \quad \text{for } (x, y) \in E^n \times (0, Y]; \quad u(x, 0) = 0 \quad \text{for } x \in E^n$$

such that, for some positive constants $c_1 \geq 0$ and $c_2 > 0$,

$$(1.1) \quad \max_{E^n \times [0, Y]} \left\{ |u| \exp \left(-c_1 \sum_{i=1}^n x_i^2 \right) \right\} \leq c_2,$$

then $u \equiv 0$ in $E^n \times [0, Y]$. Our object in this paper is to extend TИHONOV's result to systems of parabolic linear differential equations of arbitrary order with variable coefficients. Most of our results have been announced in [1].

We consider the $N \times N$ matrix linear differential operator of order $2b$

$$L \equiv P(x, y; D) - E \frac{\partial}{\partial y}$$

for $(x, y) \in E^n \times [y', y''] = R$, where E is the $N \times N$ identity matrix,

$$P(x, y; D) = \sum_{|k| \leq 2b} A^{(k)}(x, y) D^k,$$

$A^{(k)}(x, y) = (A_{\mu\nu}^{(k)}(x, y))$ for $\mu, \nu = 1, 2, \dots, N$, $b \geq 1$ is an integer, $k = (\kappa_1, \kappa_2, \dots, \kappa_{|k|})$ for integers κ_i which satisfy $1 \leq \kappa_i \leq n$, and $D^k = \prod_{i=1}^{|k|} \partial / \partial x_{\kappa_i}$. Following PETROVSKIĀ [11], we say that L is *uniformly*

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