

ON CLASSICAL SOLVABILITY
OF THE FIRST INITIAL-BOUNDARY VALUE PROBLEM
FOR EQUATIONS GENERATED BY CURVATURES

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Dedicated to Jürgen Moser

1. Main theorem and estimations in \mathbb{C}^2

The aim of this paper is to prove the existence theorem announced in [5]. The proof is based on a priori estimates which were done in [6]–[8] for solutions to equations including the equations from [5]. We have to add to these estimates the estimates of Hölder constants for u_t and $u_{x_i x_j}$. Section 2 is devoted to this purpose.

We study the problems

$$(1.1) \quad M_m[u] = 3D - \frac{u_t}{\sqrt{1+u_x^2}} + f_m(k[u]) = 3Dg \quad \text{in } Q_T = 3D\Omega \times (0, T),$$

$$(1.2) \quad u = 3D\varphi \quad \text{on } \partial'Q_T, \quad m \in [2, n],$$

where Ω is a bounded domain in \mathbb{R}^n with a smooth boundary $\partial\Omega$, $\partial'Q_T = 3D\partial''Q_T \cup \Omega(0)$, $\partial''Q_T = 3D\partial\Omega \times [0, T]$, $\Omega(0) = 3D\{z = 3D(x, t) \mid x \in \Omega, t = 3D0\}$. Functions $g : \overline{Q_T} \rightarrow \mathbb{R}^1$ and $\varphi : \overline{\Omega} \rightarrow \mathbb{R}^1$ are known, and function

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