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8. Analysis

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Stability of classes of Lipschitz-continuous solutions to systems of first-order linear partial differential equations

Let $\mathfrak{D}_C$ be the class of C-Lipschitz-continuous solutions $g = (g_1, \ldots, g_m) : U \to \mathbb{R}^m$ (defined on domains $U \subset \mathbb{R}^n$) to the system

$$\sum_{\mu=1}^{m} \sum_{\nu=1}^{n} a_{\nu\mu\kappa} \partial_\nu g_\mu(x) = b_\kappa, \quad \kappa = 1, \ldots, k; \tag{1}$$

$C \geq 0$, $a_{\nu\mu\kappa}, b_\kappa \in \mathbb{R}$. For any elliptic system (1) the class $\mathfrak{D}_C$ is stable (in the sense of A. P. Kopylov's ω-stability). Applications to studying ω-stability for other classes will be presented. This research was financially supported by the RFBR (Grant 96–01–01769) and the Federal Program “Leading Scientific Schools” (Grant 96–15–96291).

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