where $K = \sum_{i=1}^{n} \sup_{t\in R^1} |g_i - \bar{g}_i|^* (t)$. The last inequality contradicts (2.5), which implies our assertion.

Proof of Theorem 2.2. Let $(a_1, b_1)$ and $(a_2, b_2)$ be two intervals such that $(a_1, b_1) \cap (a_2, b_2) \neq \emptyset$, $[a_1, b_1] \cup [a_2, b_2] \subset (a, b)$ and $\sum_{i,j=1}^{n} \int_{a_r}^{b_r} L_{ij}(t)\,dt < 1$ for $r = 1, 2$. Moreover, let $\beta > 0$ and $a_1 + \beta$, $b_1 - \beta \in (a_1, b_1)$, $a_2 + \beta$, $b_2 - \beta \in (a_2, b_2)$, $(a_1 + \beta, b_1 - \beta) \cap (a_2 + \beta, b_2 - \beta) \neq \emptyset$ and $t_0 \in (a_1 + \beta, b_1 - \beta)$. We consider the sequence $\{g_{iv}\}$ defined as follows

$$(3.10) \qquad g_{i0}(t) = y_i^0, \quad g_{iv}(t) = y_i^0 + \int_{t_0}^{t} f_i(g_{1v-1}(s), \ldots, g_{nv-1}(s))\,ds,$$
$$i = 1, \ldots, n, \quad v = 1, \ldots, \quad t \in (a, b).$$

It is not difficult to verify that the sequence of functions $\{g_{iv}^*(t)\}$ is uniformly convergent to a function $g_i$ $(i = 1, \ldots, n)$ of bounded variation in the interval $[a_1 + \beta, b_1 - \beta]$. Moreover, the system of functions $(g_1(t), \ldots, g_n(t))$ is the unique solution of the problem (2.11) in the class $V^n_{(a_1+\beta, b_1-\beta)}$. Applying the property (P) we can extend uniquely the local solution to the whole interval $(a, b)$, which completes the proof of Theorem 2.2.

*References*


[1] *P. Antosik:* Order with respect to measure and its application in investigation of product generalized function (in Russian), Studia Math., *26* (1966), 247—261.

[2] *P. Antosik:* On the modulus of distribution, Bull. Acad. Polon. Sci. Ser. math. astr. et phys. *15* (1967), 717—722.

[3] *P. Antosik:* The symetric value of a distribution at a point, Proceedings of the Scientific Research Centre at Zabrze, Polish Academy of Sciences, Institute of Mathematics, Polish Academy of Sciences, Warsaw 1973.

[4] *P. Antosik, J. Mikusiński, R. Sikorski:* Theory of distributions. The sequential approach, Amsterdam—Warsaw 1973.

[5] *E. A. Coddington, N. Levinson:* Theory of ordinary differential equations, New—York—Toronto—London 1955.

[6] *V. Doležal:* Dynamics of linear systems, Praha 1964.

[7] *T. H. Hildebrandt:* On systems of linear differentio - Stieltjes integral equations, Illinois J. Math., *3* (1959), 352—373.

[8] *J. Kurzweil:* Generalized ordinary differential equations, Czech. Math. J., *8* (*83*) (1958), 360—389.

[9] *J. Kurzweil:* Linear differential equations with distributions as coefficients, Bull. Acad. Polon. Sci. Ser. math. astr. et phys., *7* (1959), 557—560.

[10] *A. Lasota, J. Traple:* Nicoletti boundary value problem for systems of linear differential equations with distributional perturbations, Zeszyty Naukowe U.J., Prace Matematyczne, *15* (1971), 103—108.

[11] *J. Ligęza:* On generalized solutions of ordinary differential equations (in Polish), Doctoral dissertation, Biblioteka Główna Uniwersytetu Śląskiego w Katowicach 1974.

[12] *J. Ligęza:* On generalized solutions of some systems of non-linear differential equation, Prace Matematyczne Uniwersytetu Śląskiego w Katowicach, *5* (1974), 25—31.
[13] *J. Ligęza:* Cauchy's problem for systems of linear differential equations with distributiona coefficients, Colloquium Math., *33* (1975), 295—303.
[14] *J. Ligęza:* On the existence of the product of a measure and a function of locally bounded variation, (to appear), Studia Math.
[15] *Š. Schwabik:* Verallgemeinerte lineare Differentialgleichungssysteme, Čas. pěst. mat. *96* (1971), 183—211.
[16] *Š. Schwabik, M. Tvrdý:* On the generalized linear ordinary differential equations, ibidem *2* (1973), 206—211.

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