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SUPPLEMENT TO THE ARTICLE "ON APPROXIMATION OF CONTINUOUS FUNCTIONS IN THE METRIC $\int_a^b |x(t)| \mathrm{d}t$"

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Instead of lemma (2,3), we may prove a stronger (and simpler) result.

(2,3′) *Let $x_0 \in B$, $e_0 \in E$ and suppose that $x_0 \pm e_0 \perp E$. Then $x_0(t) = 0$ implies $e_0(t) = 0$ for every $t \in T$.*

Proof. According to (2,2), we have $(x_0(t) + e_0(t)) (x_0(t) - e_0(t)) \geqq 0$ for every $t \in T$. Hence $|x_0(t)| \geqq |e_0(t)|$ for every $t \in T$.

If we use this lemma instead of (2,3), we see at once that, in the proof of theorem 2, the "only if" part may be dropped entirely except for the first seven lines. To prove theorem 1, we may argue in the following manner. Either there exists an $x_0 \in V$ such that $Z(x_0)$ contains at least n distinct inner points of T. There exists an $e_0 \in E$, $e_0 \neq 0$ such that $x_0 \pm e_0 \perp E$. According to (2,3′), we have then $Z(e_0) \supset Z(x_0)$. If $Z(x)$ has at most $n - 1$ inner points for every $x \in V$, we may proceed as in 3°.

Резюме

ДОПОЛНЕНИЕ К СТАТЬЕ ,,ОБ АППРОКСИМАЦИИ В НОРМЕ $\int_a^b |x(t)| \mathrm{d}t$"

ВЛАСТИМИЛ ПТАК (Vlastimil Pták), Прага

Указывается значительное упрощение некоторых доказательств. (См. статью в Чехослов. мат. журнале *8*(*83*), 1958, 267—273.)