BIOCHEMISTRY

PLANT PHYSIOLOGY

1961

SovietRxiv

Abstract

Full Text

LETTER TO THE EDITOR

Having re-examined my note "On the impossibility of constructing a linear polynomial operator giving an approximation of the order of the best" ([1]), I found that the method of proof of Theorems 1 and 2 makes it possible, without any additions, to obtain a considerably more interesting theorem, which, in the notation and terminology of the note mentioned, is formulated as follows:

Theorem. In order that, for a functional space of type E, it be possible to construct a sequence of linear trigonometric polynomial operations $U_n(f, x)$, $n = 1, 2, ...$, giving an approximation of the order of the best, it is necessary and sufficient that for every $f \in E$ the equality

$$\|f - S_n(f)\| = O(E_n), \quad n = 1, 2, \dots,$$

hold, where $S_n(f)$ is the partial sum of the Fourier series of the function $f(x)$ of order n, and E_n is the best approximation of $f(x)$ by means of a polynomial of order n in the metric of the space E.

We note that the theorem remains valid for a certain more general class of

functional spaces, and also for the case of harmonic analysis on bicompact commutative topological groups.

D. Berman

REFERENCES CITED

[1] D. Berman, *DAN*, **120**, No. 6 (1958).

Note: Figure translations are in progress. See original paper for figures.

Source: Math-Net.Ru and CyberLeninka. Machine translation. Verify with the original.