N. V. Derevianko

Approximation of the classes of periodic functions of several variables by some linear methods

Institute of Mathematics, Kyiv, Ukraine
E-mail: nadyaderevyanko@gmail.com

In this talk we deal with the classes H_p^Ω of periodic functions of several variables. These classes are in some sense generalization of the Nikol'skii classes H_p^r. The aim was to extend some previous results obtained by A. V. Andrianov, V. N. Temlyakov [1] from the classes H_p^r to the classes H_p^Ω.

We established the upper order estimates for the approximation of functions of the classes H_p^Ω by some linear methods constructed by using operators of special form in the space L_p for $1 \le p \le \infty$. Using this result we obtained the exact order estimates of orthoprojective widths of the classes H_p^Ω in the space L_p for $p \in \{1, \infty\}$ [2].

[1] A. V. Andrianov, V. N. Temlyakov, On two methods of generalization of properties of univariate function systems to their tensor product, *Proc. Steklov Inst. Math.*, **219** (1997), p. 25–35.

[2] N. V. Derev'yanko, Approximation of the classes H_p^Ω of periodic functions of many variables in the space L_p , *Ukrainian Mathematical Journal*, **66** (2014), p. 707–718.