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Trigonometric approximations and Kolmogorov widths of anisotropic Besov classes of periodic functions of several variables

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We obtained the exact order estimates for the approximations of periodic functions of several variables from the anisotropic Besov classes $\mathbb{B}^{\boldsymbol{R}}_{p,\theta}$ by means of trigonometric polynomials in the spaces $L_q(\pi_d)$ (see [1]). The spectrum of trigonometric polynomials realizing approximation is contained in d-dimensional parallelepiped.

We also studied the behavior of Kolmogorov widths of the classes $\mathbb{B}^{\boldsymbol{R}}_{p,\theta}$. It turns out that in some cases the subspace of trigonometric polynomials with spectrum in d-dimensional parallelepiped is the extremal subspace for approximation of the classes $\mathbb{B}^{\boldsymbol{R}}_{p,\theta}$ (see [1]).

[1] V. V. Myronyuk, Trigonometric approximations and Kolmogorov widths of anisotropic Besov classes of periodic functions of several variables, *Ukrainian Mathematical Journal,* **66***, No. 8 (2015), p. 1248–1266.*