

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

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We obtain the exact order estimates for the approximations of periodic functions of several variables from the anisotropic Besov classes  $B_{p,\theta}^R$  by means of trigonometric polynomials in the space  $L_q$ . The spectrum of trigonometric polynomials realizing approximation is contained in  $d$ -dimensional parallelepiped.

Also, in some cases the behavior of Kolmogorov widths of the classes  $B_{p,\theta}^R$  is studied. It turns out that in such cases the subspace of trigonometric polynomials with spectrum in  $d$ -dimensional parallelepiped is the optimal subspace for approximation of the classes  $B_{p,\theta}^R$ .