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The best multivariate approximation of Nikol'skii-Besov classes (mixed smoothness) of periodic functions

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The approximation of Nikol'skii-Besov classes (with mixed smoothness) of periodic multivariate functions is considered. Namely, the estimation of these classes by trigonometric polynomials with the spectrum from the step hyperbolic crosses is obtained. These investigations complete the results obtained in [1], [2]. It is shown that the exact order estimates of the Kolmogorov widths are achieved in some cases of considered subspaces of the trigonometric polynomials.

- [1] N. N. Pustovoitov *Math. Notes* **65**, (1999), p. 89-98.
- [2] S. A. Stasyuk *Math. Notes* **87**, (2010), p. 102-114.