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MSC: 42A10, 42B10, 42B35

CONSTRUCTIVE SPARSE TRIGONOMETRIC APPROXIMATIONS OF FUNCTION CLASSES WITH SMALL MIXED SMOOTHNESS¹

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Exact order bounds are obtained for the best m -term trigonometric approximation (in the integral metric) of periodic functions with small mixed smoothness from classes close to Nikol'skii–Besov type classes. The obtained bounds differ (under identical constraints on the smoothness) from the corresponding bounds of the best m -term trigonometric approximation of Besov classes of mixed smoothness established by A.S. Romanyuk. The upper bound is realized by a constructive method based on a greedy algorithm.

Keywords: nonlinear approximation, sparse approximation, mixed smoothness, order bounds.

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