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APPROXIMATION OF CERTAIN SMOOTHNESS CLASSES OF PERIODIC FUNCTIONS OF SEVERAL VARIABLES BY POLYNOMIALS WITH REGARD TO THE TENSOR HAAR SYSTEM

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We investigate two kinds of approximation (linear and nonlinear) of certain smoothness classes (close to Nikol'skii–Besov type classes of mixed smoothness) of periodic functions of several variables by polynomials with regard to the tensor Haar system. For the functions of these classes we obtain upper order estimates for the approximation by step-hyperbolic Fourier–Haar sums and exact order estimates for the best m-term approximation with regard to the tensor Haar system.

Keywords: approximation of functions of several variables, tensor Haar system, best m-term approximation.

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