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MSC: 42A10, 41A17, 41A44

**BEST APPROXIMATIONS AND WIDTHS OF SOME CLASSES
OF CONVOLUTIONS IN L_2^1**

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We find tight upper bounds for the best approximations by trigonometric polynomials of certain classes of periodic functions representable as convolutions with structural characteristics defined by various modifications of m -th order moduli of continuity in the metric of L_2 . We also find exact values for the n -widths of convolution classes given by such smoothness characteristics.

Keywords: best approximation, periodic function, trigonometric polynomial, modulus of continuity of m th order, n -widths.

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