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On approximation of functions by algebraic polynomials in Hölder spaces

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We obtain new estimates of approximation of functions by algebraic polynomials in the Hölder spaces generated by the generalized Jacobi translations and by the Ditzian-Totik moduli of smoothness. By using modifications of the classical moduli of smoothness, we give improvements of the direct and inverse theorems of approximation and derive strong converse inequalities for some methods of approximation of functions in the Hölder spaces. As an example, we consider approximation by the Durrmeyer-Bernstein polynomial operators.

This is joint work with Yuriy Kolomoitsev (Institute of Mathematics, NAS of Ukraine, Kiev) and Jürgen Prestin (Universität zu Lübeck, Institut für Mathematik).