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Title: An application of convex geometry to approximation theory: approximation by ridge functions

Abstract: We consider best approximation of some function classes by the manifold M_n consisting of sums of n arbitrary ridge functions. It is proved that the deviation of the Sobolev class $W_p^{r,d}$ from the manifold M_n in the space L_q for any $2 \leq q \leq p \leq \infty$ behaves asymptotically as $n^{-\frac{r}{d-1}}$. In particular we obtain this asymptotic estimate for the uniform norm $p = q = \infty$. Joint work with Yehoram Gordon, Vitaly Maiorov and Mathieu Meyer