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Title: Estimates for n-term approximation in Hilbert space and related problems

Abstract: The talk is devoted to the lower estimates of the best n-term approximations of certain sets in Hilbert spaces with respect to orthonormal systems (o.n.s.). In particular, it is proved that for any o.n.s. in $L^2(I^2)$, where $I^2 = (0,1)^2$ is a unit square, and for all $n = 1, 2, ...$ there exists a convex subset of unit square such that the best n-term approximation of its characteristic function with respect to this system is greater then c/n , where c is an absolute positive constant. In relation to the estimates of best n-term approximation, we have introduced and studied one characteristic of massivness of a given subset of a Hilbert space.