

Kolmogorov problem on widths asymptotics
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Given a compact set K in an open set D on a Stein manifold Ω , $\dim \Omega = n$, the set A_K^D of all restrictions of functions, analytic in D with absolute value bounded by 1, is considered as a compact subset in $C(K)$. The problem about the strict asymptotics for Kolmogorov diameters: $-\ln d_s(A_K^D) \sim \sigma s^{1/n}$ as $s \rightarrow \infty$, was stated by Kolmogorov (in an equivalent formulation for ε -entropy of this set) in 1950ies. In our talk we discuss a solution of the Kolmogorov problem, which is a synthesis of 1) *our result about the reduction of Kolmogorov problem to the problem of Pluripotential Theory about approximation of Green pluripotential of the pluricondenser (K, D) by pluripotentials with finite set of logarithmic singularities* and 2) *the recent result of Nivoche and Poletsky, solving the latter problem*. Some related unsolved problem will be discussed.