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Average best m -term approximation

We introduce the concept of average best m -term approximation widths with respect to a probability measure on the unit ball of ℓ_p^n . We estimate these quantities for the embedding $id : \ell_p^n \rightarrow \ell_q^n$ with $0 < p \leq q \leq \infty$ for the normalised cone and surface measure. Furthermore, we consider certain tensor product weights and show that a typical vector with respect to such a measure exhibits a strong compressible (i.e. nearly sparse) structure.