

SECTIONS AND PROJECTIONS OF ℓ_p^n BALLS

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Let B_p^n be the unit ball in the standard p -th norm in \mathbb{R}^n . Suppose we intersect this ball with a codimension one hyperplane H and ask the following question: for which H is the volume of this section maximal and minimal? During the talk we will present the history of this problem with emphasis on various probabilistic approaches. In particular, we shall sketch the proof of the fact that H perpendicular to the vector $(1, 1, 0, \dots, 0)$ gives the maximizer for $p > 10^{15}$ (joint work with A. Eskenazis and T. Tkocz). The dual problem for projections will also be briefly discussed.