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Elizabeth Meckes* (ese3@case.edu). *Projections of probability measures: a measure-theoretic Dvoretzky theorem.*

Dvoretzky's theorem tells us that if we put an arbitrary norm on n -dimensional Euclidean space, then by passing to subspaces of dimension about $\log(n)$, that arbitrary norm looks almost Euclidean itself. A related measure-theoretic phenomenon has long been observed: the (one-dimensional) marginals of many natural high-dimensional probability distributions are approximately Gaussian. A question which had received little attention until recently is whether this phenomenon persists for k -dimensional marginals for k growing with n , and if so, for how large a k ? In this talk I will discuss recent work showing that the phenomenon persists if k is of the order $\log(n)/\log(\log(n))$, and that this bound is sharp. (Received August 15, 2012)