

**LARGE DEVIATIONS FOR UNIFORM PROJECTIONS
OF p -RADIAL DISTRIBUTIONS ON ℓ_p^n -BALLS**

BY

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Abstract. We consider products of uniform random variables from the Stiefel manifold of orthonormal k -frames in \mathbb{R}^n , $k \leq n$, and random vectors from the n -dimensional ℓ_p^n -ball \mathbb{B}_p^n with certain p -radial distributions, $p \in [1, \infty)$. The distribution of this product geometrically corresponds to the projection of the p -radial distribution on \mathbb{B}_p^n onto a random k -dimensional subspace. We derive large deviation principles (LDPs) on the space of probability measures on \mathbb{R}^k for sequences of such projections.

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