

Invariant symmetric diffusions on $SU(2)$

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Abstract

We show that all Riemannian (and sub-Riemannian) invariant geometries on the compact group $SU(2)$ are doubling, uniformly. Namely, there is a constant D such that, for any invariant Riemannian metric on $SU(2)$, the ratio of the Haar volumes of the balls of radius $2r$ and r is at most D . We discuss the consequence of this theorem and its possible generalizations.