

On the characterization of isotropic Gaussian fields on homogeneous spaces of compact groups

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Abstract

Let $\{X_t\}$ be a random field weakly invariant under the action of a compact group G . We give conditions ensuring that independence of the random Fourier coefficients is equivalent to Gaussianity. As a consequence, in general it is not possible to simulate a non-Gaussian invariant random field through its Fourier expansion using independent coefficients

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