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Universality of Correlations for Random Analytic Functions

Shannon Starr

(Submitted on 20 Jul 2011)

We review a result obtained with Andrew Ledoan and Marco Merkli. Consider a random analytic function $f(z) = \sum_{n=0}^{\infty} a_n X_n z^n$, where the X_n's are i.i.d., complex valued random variables with mean zero and unit variance, and the coefficients a_n are non-random and chosen so that the variance transforms covariantly under conformal transformations of the domain. If the X_n's are Gaussian, this is called a Gaussian analytic function (GAF). We prove that, even if the coefficients are not Gaussian, the zero set converges in distribution to that of a GAF near the boundary of the domain.

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