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Title: The Zeros of Gaussian Random Holomorphic Functions on $\mathbb{C}^n$ and Hole Probability

Abstract: I consider a class of Gaussian random holomorphic functions, whose expected zero set is uniformly distributed over $\mathbb{C}^n$. This class is unique (up to multiplication by a non zero holomorphic function), and is closely related to a Gaussian field over a Hilbert space of holomorphic functions on the reduced Heisenberg group. For a random function of this class, I show that the probability there are no zeros in a ball of large radius $r$ is bounded above by $e^{-Cr^{2n+2}}$, and bounded below by $e^{-cr^{2n+2}}$, for some constants $c$ and $C$. 