1127-58-28 **Liviu I Nicolaescu*** (lnicolae@nd.edu), Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. *Random functions and spectral geometry.*

On a given closed Riemann manifold $(M, g)$ we consider random functions described as sums of certain random series of eigenfunctions of the rescaled metric $\hbar^{-2}g$. As $\hbar \to 0$ this random function approaches the white noise. We investigate the asymptotic behavior as $\hbar \to 0$ of several quantities associated to this random function and explain how to completely recover the geometry of $(M, g)$ from these probabilistic asymptotics. (Received January 04, 2017)