1127-41-95 **Aaron M. Yeager*** (aaron.yeager@okstate.edu), 913 S. Orchard Street, Stillwater, OK 74074, and **Maxim L. Yattselev**, Department of Mathematical Sciences, 402 North Blackford Street, Indianapolis, IN 46202. *Zeros of Real Random Polynomials Spanned by OPUC.*

Let $\{\varphi_i\}_{i=0}^{\infty}$ be a sequence of orthonormal polynomials on the unit circle with respect to a probability measure μ. We study zero distribution of random linear combinations of the form

$$P_n(z) = \sum_{i=0}^{n-1} \eta_i \varphi_i(z),$$

where $\eta_0, \ldots, \eta_{n-1}$ are i.i.d. standard Gaussian variables. We use the Christoffel-Darboux formula to simplify the density functions provided by Vanderbei for the expected number real and complex of zeros of P_n. From these expressions, under the assumption that μ is in the Nevai class, we deduce the limiting value of these density functions away from the unit circle. Under the mere assumption that μ is doubling on subarcs of the unit circle centered at 1 and -1, we show that the expected number of real zeros of P_n is at most

$$(2/\pi) \log n + O(1),$$

and that equality holds when μ is in the Szegő-Bernstein class. We conclude with providing discrepancy results that estimate the expected number of complex zeros of P_n in shrinking neighborhoods of compact subsets of the unit circle. (Received January 25, 2017)