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Xiaoju Xie* (sophia.xie@okstate.edu). *Expected number of real zeros of random orthogonal polynomials.*

We study the expected number of real zeros for random linear combinations of orthogonal polynomials. It is well known that Kac polynomials, spanned by monomials with i.i.d. Gaussian coefficients, have only $(2/\pi + o(1)) \log n$ expected real zeros in terms of the degree n . On the other hand, if the basis is given by Legendre (or more generally by Jacobi) polynomials, then random linear combinations have $n/\sqrt{3} + o(n)$ expected real zeros. We prove that the latter asymptotic relation holds universally for a large class of random orthogonal polynomials on the real line, and also give more general local results on the expected number of real zeros. This is a joint work with Doron S. Lubinsky and Igor E. Pritsker. (Received September 16, 2015)