1161-60-244 **Andrew Ledoan*** (andrew-ledoan@utc.edu), University of Tennessee at Chattanooga, Department of Mathematics, 615 McCallie Avenue, Chattanooga, TN 37403, and **Christopher Corley** (christopher-corley@utc.edu), University of Tennessee at Chattanooga, Department of Mathematics, 615 McCallie Avenue, Chattanooga, TN 37403. *The density of complex zeros of random sums.*

Let $\{\eta_j\}_{j=0}^N$ be a sequence of independent and identically distributed random complex Gaussian variables, and let $\{f_j(z)\}_{j=0}^N$ be a sequence of given analytic functions that are real-valued on the real line. I will present an exact formula for the expected density of the distribution of complex zeros of the random equation $\sum_{j=0}^N \eta_j f_j(z) = \mathbf{K}$, where $\mathbf{K} \in \mathbb{C}$. The method of proof employs a formula for the expected absolute value of quadratic forms of Gaussian random variables. I will also discuss the limiting behavior of the density function as N tends to infinity and provide some numerical computations for the density function and empirical distributions for random sums with various choices of the functions $f_j(z)$, including polynomials orthogonal on the real line and the unit circle. (Received August 17, 2020)