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Sean O'Rourke^{*} (sean.d.orourke@colorado.edu), Department of Mathematics, University of Colorado, Campus Box 395, Boulder, CO 80309-0395, and Tulasi Ram Reddy. Sums of random polynomials with independent roots.

We consider the sum of independent random polynomials as their degrees tend to infinity. Namely, let p and q be two independent random polynomials of degree n, whose roots are chosen independently in the complex plane. We compute the limiting distribution for the zeros of the sum p + q as n tends to infinity by analyzing its logarithmic potential. We will also discuss a generalization for more than two polynomials. These results can be viewed as describing a version of the free additive convolution from free probability theory for zeros of polynomials. (Received August 11, 2020)