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Michael Epstein* (michael.epstein@colostate.edu), **Boris Hanin** (bhanin@math.tamu.edu)
and **Erik Lundberg** (elundber@fau.edu). *The Lemniscate Tree of a Random Polynomial.*

Given a generic complex polynomial $p(z)$, we can encode the topology of the graph of $|p(z)|$ with a labeled tree. More specifically, the branching structure of the tree, which we call a *lemniscate tree*, encodes the nesting structure of the singular components of the level sets of $|p(z)|$ that pass through critical points. One may therefore study the topological configuration of these singular components of level sets by studying the structure of the associated lemniscate tree. We study the amount of branching in a random lemniscate tree, and we compare the outcome for two different notions of “random”: we consider sampling uniformly at random from the combinatorial class of all such trees associated to the generic polynomials of a given degree, and we also consider the random lemniscate tree associated to a random polynomial with i.i.d. zeros. (Received September 13, 2019)