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Zeros of some random polynomials and connectedness locus of fractal n -gons. Preliminary report.

We consider the closure of the set of zeros of polynomials with complex coefficients randomly chosen from a “good” compact subset of complex plane. It is already known that the closure of the set of zeros is path connected if the “good” compact subset is $\{0, 1\}$ (A. M. Odlyzko and B. Poonen, 1993). We prove that the closure of the set of zeros is connected. Furthermore, we apply this result to the study of connectedness locus (\mathcal{M}_n) of fractal n -gons. Fractal n -gons and \mathcal{M}_n are introduced by C. Bandt and N. V. Hung (2008). It is already known that \mathcal{M}_2 and \mathcal{M}_3 are connected (T. Bousch (1988), Y. Himeki under supervision Y. Ishii (2018)). We prove that for each $n = 2, 3, 4, 5, 6$, \mathcal{M}_n is connected. (Received September 06, 2019)