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**Shiwen Zhang\*** ([zhangshiwen@math.msu.edu](mailto:zhangshiwen@math.msu.edu)). *The Projection of some Random Cantor sets and the Decay Rate of the Favard length.*

The Favard length of a set  $E$  has a probabilistic interpretation: up to a constant factor, it is the probability that the “Buffon’s needle,” a long line segment dropped at random, hits  $E$ . In this talk, we study the Favard length of some random Cantor sets of dimension 1. Replace the unit disc by 4 disjoint sub-discs of radius  $1/4$  inside. By repeating this operation in a self-similar manner and adding a random rotation in each step, we can generate a random Cantor set  $D(\omega)$ . Let  $D_n$  be the  $n$ -th generation in the construction, which is comparable to the  $4^{-n}$ -neighborhood of  $D$ . We are interested in the decay rate of the Favard length of these sets  $D_n$  as  $n \rightarrow \infty$ , which is the likelihood (up to a constant) that the “Buffon’s needle” will fall into the  $4^{-n}$ -neighborhood of  $D$ . It is well known that the lower bound for such 1-dimensional set is constant multiple of  $n^{-1}$ . We show that the upper bound of the Favard length of  $D_n$  is also constant multiple of  $n^{-1}$  in the average sense. (Received September 19, 2017)