
TIANYI ZHENG, UC San Diego

Joint behavior of volume growth and entropy of random walks on groups

In the last few years there has been significant advancement in understanding the possible range of behaviors of the volume growth and of the entropy and rate of escape of random walks on groups. Bartholdi and Erschler constructed the first family of intermediate growth groups whose volume growth function follows any prescribed nice enough function in the exponent range $[\alpha_0, 1]$ for some explicit $\alpha_0 \approx 0.7674$. We discuss a variant of a construction of Kassabov and Pak which provides an alternative proof of the Bartholdi-Erschler result. Different behaviors of entropy of random walks on these two families of groups allow us to deduce a result concerning possible joint behavior of intermediate volume growth and entropy of random walks within a certain range of parameters. Joint with Gidi Amir.