Speed exponents for random walks on groups

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In Euclidean lattices, the expected distance of the random walker from its starting point at time n is of order $n^{1/2}$. For regular trees, the expected distance is of order n.

It is an open question what exponents, besides 1/2 and 1, are possible for random walks on discrete groups. In joint work with Gidi Amir, we show that there are groups for all values in $[3/4, 1]$.