

NO CUTOFF FOR CIRCULANTS: AN ELEMENTARY PROOF

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Abstract. We give an elementary proof of a result due to Diaconis and Saloff-Coste (1994) that families of symmetric simple random walks on Cayley graphs of abelian groups with a bound on the number of generators never have sharp cutoff. Here convergence to the stationary distribution is measured in the total variation norm. This is a situation of bounded degree and no expansion; sharp cutoff (or the cutoff phenomenon) has been shown to occur in families such as random walks on a hypercube (Diaconis, 1996) in which the degree is unbounded as well as on a random regular graph where the degree is fixed, but there is expansion (Diaconis and Saloff-Coste, 1993).

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