

MONOTONICITY FOR EXCITED RANDOM WALK IN HIGH DIMENSIONS

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ABSTRACT. Excited random walk is a self-interacting random walk that has an expected drift β/d to the right when at a previously unvisited vertex. Various authors, including Benjamini and Wilson, Kozma, Zerner and Berard and Ramirez have established laws of large numbers and central limit theorems in dimensions $d \geq 2$ using renewal techniques. It is natural to expect that the speed (as in the law of large numbers) is monotone increasing in the parameter $\beta \in [0, 1]$, for all $d \geq 2$. In joint work with Remco v. d. Hofstad we show that this is true in high dimensions, using a perturbative expansion.

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