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**Peter Nandori\*** ([peter.nandori@yu.edu](mailto:peter.nandori@yu.edu)). *Global observables for random walks: law of large numbers.*

We consider the sums  $T_N = \sum_{n=1}^N F(S_n)$ , where  $S_n$  is a random walk on  $\mathbb{Z}^d$  and  $F : \mathbb{Z}^d \rightarrow \mathbb{R}$  is a global observable, that is, a bounded function, which admits an average value when averaged over large cubes. We show that  $T_N$  always satisfies the weak Law of Large Numbers but the strong law fails in general except for one dimensional walks with drift. Under additional regularity assumptions on  $F$ , we obtain the Strong Law of Large Numbers and estimate the rate of convergence. The growth exponents which we obtain turn out to be optimal in two special cases: for quasiperiodic observables and for random walks in random scenery. This is a joint work with Dmitry Dolgopyat and Marco Lenci. (Received August 19, 2019)