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Jonathon Peterson* (peterston@math.purdue.edu), 150 N University St, West Lafayette, IN 47920. *Large deviations for random walks in a random environment on a strip.*

We consider large deviations of random walks in a random environment on the strip $\mathbb{Z} \times \{1, 2, \dots, d\}$. Large deviations for random walks in random environments have been studied in a variety of different types of graphs, but only in the one-dimensional nearest-neighbor case is there a known variational formula relating the quenched and averaged rate functions. We will generalize the argument for the one-dimensional case to that of a strip of finite width and prove quenched and averaged large deviation principles with a variational formula relating the two rate functions. The main novelty in our approach will be to use an idea of Furstenberg and Kesten to obtain probabilistic formulas for the limits of certain products of random matrices. (Received February 16, 2013)