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Though the research on quantum walk is developed in the recent decades, any counterpart of semi-classical approximation theory does not appear. First, to establish the notion of semi-classical approximation in quantum walk, we have to define classical random walk in the context of quantum walk and give a sequence of quantum walks which approximates the quantum walk equivalent to classical random walk.

In the presentation the author give a quantum walk driven by the baker's transformation and show that the quantum walk has the same statistical property as the classical random walk has. The baker's transformation is a typical example of uniformly hyperbolic dynamical system with invariant probability measure.

Moreover, properties of quantum walks driven by quantum baker's transformation are described. These quantum walks consist of a family of quantum walks which approximates classical random walk. (Received September 13, 2013)