Open Quantum Random Walks in Two-Dimensions

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Recently a new model of the quantum walk, the Open Quantum Random Walk (OQRW) has appeared in the literature [1,2]. In [3] the authors show the central limit theorem for OQRW’s on Z^d , the d-dimensional integer space. In [4] the limit theorem for OQRW on Z is obtained. In this paper we obtain the limit theorem for the OQRW on Z^2 , and discuss some examples. As an application we obtain the distribution of the Correlated OQRW on Z^2.

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