

Quantum Markov chains of open quantum random walks

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Abstract

In this talk we discuss the quantum Markov chains initiated by Accardi. It was developed to extend the classical Markov chains to noncommutative spaces. Here we will specifically consider the open quantum random walks as quantum Markov chains. Then we discuss the reducibility and irreducibility of the open quantum random walks based on the theory of quantum Markov chains. Some examples will be provided. In particular, the classical Markov chains will be considered as open quantum random walks, and hence as quantum Markov chains. This talk is based on the joint work with Ameer Dhahri and Chul Ki Ko.