Quantum Random Walks and Minors of Hermitian Brownian Motion
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Abstract. Considering quantum random walks, we construct discrete-time approximations of the eigenvalues processes of minors of Hermitian Brownian motion. It has been recently proved by Adler, Nordenstam, and van Moerbeke that the process of eigenvalues of two consecutive minors of a Hermitian Brownian motion is a Markov process; whereas, if one considers more than two consecutive minors, the Markov property fails. We show that there are analog results in the noncommutative counterpart and establish the Markov property of eigenvalues of some particular submatrices of Hermitian Brownian motion.