

THE KARLIN–MCGREGOR FORMULA FOR PATHS CONNECTED WITH A CLIQUE

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Abstract: The Karlin–McGregor formula, a well-known integral expression of the m -step transition probability for a nearest-neighbor random walk on the non-negative integers (an infinite path graph), is reformulated in terms of one-mode interacting Fock spaces. A truncated direct sum of one-mode interacting Fock spaces is newly introduced and an integral expression for the m -th moment of the associated operator is derived. This integral expression gives rise to an extension of the Karlin–McGregor formula to the graph of paths connected with a clique.

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