

Abstract Submitted
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Quantum random walks with multiphoton interference and high order correlation functions¹ BRYAN GARD, ROBERT CROSS, PETR ANISIMOV, HWANG LEE, JONATHAN DOWLING, None, QUANTUM SCIENCES AND TECHNOLOGIES TEAM — We show a simulation of quantum random walks with multiple photons using a staggered array of 50/50 beam splitters with a bank of detectors at any desired level. We discuss the multiphoton interference effects that are inherent to this setup, and introduce one, two, and threefold coincidence detection schemes. The use of Feynman diagrams are used to intuitively explain the unique multiphoton interference effects of these quantum random walks.

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