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Alastair Kay* (alastair.kay@rhul.ac.uk). *Quantum cloning derived from Quantum walks.*

Discussions of continuous time quantum walks are often confined to considerations within the subspace of a single excitation, and concentrate on a single protocol: perfect state transfer. Here, we propose a new protocol, the generation of uniform superpositions, that could be useful as a standalone application in near-future quantum technologies. Moreover, we show that by extending beyond the single excitation subspace, this protocol can be used to great effect in simplifying other quantum protocols, such as optimal quantum cloning. (Received February 13, 2018)