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**Radhakrishnan Balu\***, 2800 Powder Mill Rd, Adelphi, MD 20783. *Kinematics and Dynamics of Quantum Walks in terms of Systems of Imprimitivity.*

We build systems of imprimitivity (SI) in the context of quantum walks and provide geometric constructions for their configuration space. We consider three systems, an evolution of unitaries from the group  $SO_3$  on a low dimensional de Sitter space where the walk happens on the dual of  $SO_3$ , standard quantum walk whose SI live on the orbits of stabilizer subgroups (little groups) of semidirect products describing the symmetries of 1+1 spacetime, and automorphisms (walks are specific automorphisms) on distant-transitive graphs as application of the constructions. (Received September 09, 2018)