1106-81-290 **Rachael C. Alvir*** (arubirurei@gmail.com), 170 Red Sand Road, Grand Junction, CO 81507, and **Sophia Dever**. *Quantum Walks on Graphs.*

A continuous-time quantum walk on a graph $G = (V, E)$ is given by the unitary matrix $U_G(t) = e^{-itA(G)}$, where $A(G)$ is the adjacency matrix of G. We say that G exhibits *perfect state transfer* between vertices $a, b \in V$ at time t if $|U(t)_{a,b}| = 1$. These notions have been studied in the context of developing efficient quantum algorithms and also in simulating universal quantum computation. We study the effect on the walk when the laplacian, signless laplacian, or normalized laplacian is used in place of the adjacency matrix. Our results found connections between the various types of walks when examining perfect state transfer on graph products and a connection with the line graph, yielding new infinite families of graphs which exhibit perfect state transfer. (Received August 19, 2014)