Automorphisms of Cayley graphs that respect partitions

Abstract: A Cayley graph $\Gamma = \text{Cay}(G; S)$ on a group $G$ with connection set $S$, is a graph whose vertices are labelled with the elements of $G$, with vertices $g_1$ and $g_2$ adjacent if $g_1^{-1}g_2 \in S$. We say that an automorphism $\alpha$ of $\Gamma$ respects the partition $C$ of the edge set of $\Gamma$ if for every $C' \in C$, we have $\alpha(C') \in C$. I will discuss some obvious partitions of the edge set of a Cayley graph $\Gamma$, and find conditions under which a graph automorphism of $\Gamma$ that respects these partitions and fixes a vertex, must be an automorphism of the group $G$. 

EVERYONE IS WELCOME!

Visit the seminar web page at http://www.cs.uleth.ca/~nathanng/ntcoseminar/