Let $G$ be a finite group in the form $G = N \rtimes H$ such that both $N$ and $H$ are abelian. Denote by $\Gamma(G, S)$ the Cayley digraph of $G$ with connection set $S$, and let $N_R$ be the right regular representation of $N$. In the talk we give a condition in terms of the sums $\sum_{g \in S} \chi(g)$, $\chi$ are the irreducible characters of $G$, which implies that the stabilizer subgroup of $\text{Aut}(\Gamma(G, S))$ fixing $1_G$ can be embedded into the stabilizer subgroup of the 2-closure $(N_R \phi(H))^{[2]}$ fixing $1_N$. The result is used to calculate the automorphism groups for small $|S|$. 

Abstract

On Cayley digraphs of semidirect products of abelian groups

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