Abstract

On Cayley digraphs of semidirect products of abelian groups

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Let G be a finite group in the form $G = N \rtimes_\varphi H$ 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 $\sum_{g\in S} \chi(g)$, χ are the irreducible characters of G, which implies that the stabilizer subgroup of $\mathrm{Aut}(\Gamma(G, S))$ fixing 1_G can be embedded into the stabilizer subgroup of the 2-closure $(N_R\varphi(H))^{[2]}$ fixing 1_N. The result is used to calculate the automorphism groups for small $|S|$.