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Asymptotic automorphism groups of Cayley digraphs and graphs of abelian groups of prime-power order

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Abstract

We show that almost every Cayley graph Γ of an abelian group G of odd prime-power order has automorphism group as small as possible. Additionally, we show that almost every Cayley (di)graph Γ of an abelian group G of odd prime-power order that does not have automorphism group as small as possible is a normal Cayley (di)graph of G (that is, GL is normal in $\text{Aut}(\Gamma)$).

Keywords: Cayley graph, abelian group, automorphism group, asymptotic, p-group.

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Asimptotske grupe avtomorfizmov Cayleyevih digrafov in grafi Abelovih grup reda potence praštevila

Povzetek

Pokažemo, da ima skoraj vsak Cayleyev graf Γ Abelove grupe G , katere red je enak potenci lihega praštevila, grupo avtomorfizmov z najmanjšo možno kardinalnostjo. Poleg tega pokažemo, da je skoraj vsak Cayleyev (di)graf Γ Abelove grupe G , katere red je enak potenci lihega praštevila, in katerega grupa avtomorfizmov ni najmanjša možna, normalen Cayleyev (di)graf za G (to pomeni, GL je edinka v $\text{Aut}(\Gamma)$).

Ključne besede: Cayleyev graf, abelova grupa, grupa avtomorfizmov, asimptotski, p -grupa.