Suborbit Structure of Permutation $p$-Groups and an Application to Cayley Digraph Isomorphism

Brian Alspach and Shaofei Du

Abstract. Let $P$ be a transitive permutation group of order $p^m$, $p$ an odd prime, containing a regular cyclic subgroup. The main result of this paper is a determination of the suborbits of $P$. The main result is used to give a simple proof of a recent result by J. Morris on Cayley digraph isomorphisms.