

SEMINÁRIO DE ÁLGEBRA

Highly arc transitive digraphs with prime power out-valency

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Abstract. The descendant set $\text{desc}(\alpha)$ of a vertex α in a directed graph (digraph) is the subdigraph on the set of vertices reachable by a directed path from α . We study the structure of descendant sets Γ in an infinite, primitive, highly arc transitive digraph with out-valency p^k , where p is a prime and $k \geq 1$. It was already known that Γ is a tree when $k = 1$ and we show the same holds when $k = 2$. For $k \geq 3$ there are examples of infinite, primitive highly arc transitive digraphs of out-valency p^k whose descendant sets are not trees, for some prime p .