HALF-ARC-TRANSITIVE GROUP ACTIONS WITH A SMALL NUMBER OF ALTERNETS

A graph $X$ is said to be $G$-half-arc-transitive if $G \leq Aut(X)$ acts transitively on the set of vertices of $X$ and on the set of edges of $X$ but does not act transitively on the set of arcs of $X$. Such graphs can be studied via corresponding alternets, that is, equivalence classes of the so-called reachability relation. In this talk I will present recent results about graphs admitting a half-arc-transitive group action with at most five alternets.