# MONOCHROMATIC INDEPENDENT DOMINATION IN EDGE-COLOURED QUASITRANSITIVE DIGRAPHS

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We call the digraph $D$ an *$m$-coloured digraph* if the arcs of $D$ are coloured with $m$ colours. A subdigraph $H$ of $D$ is called *monochromatic* (resp. *quasi-monochromatic*) if all of its arcs (resp. with at most one exception all of its arcs) are coloured alike.

A set $N \subseteq V(D)$ is said to be a *kernel by monochromatic paths* if it satisfies the two following conditions:

(i) For every pair of different vertices $u, v \in N$, there is no monochromatic directed path between them.

(ii) For every vertex $x \in V(D) - N$, there is a vertex $y \in N$ such that there is an $xy$-monochromatic directed path.

In this talk we show that if $D$ is an $m$-coloured quasitransitive digraph then each one of the two following conditions implies that $D$ has a kernel by monochromatic paths:

(1) Every directed cycle of length 3 is monochromatic.

(2) Every directed cycle of length 3 and every $T_5$ is quasi-monochromatic and every $T_3$ is monochromatic ($T_3$ is the digraph with $V(T_3) = \{u, v, w\}$ and $A(T_3) = \{(u, v), (v, w), (u, w)\}$; $T_5$ is the digraph with $V(T_5) = \{u, v, w, x, y\}$, $T = (u, v, w, x, y)$ is a directed path and $A(T_3) = A(T) \cup \{(u, y)\}$).

**Keywords:** kernel, kernel by monochromatic paths, k-partite tournament.

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