KERNELS IN DIGRAPHS WITH AT MOST 2-COLOURED NEIGHBORHOODS

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Let D be a digraph, $V(D)$ and $A(D)$ the sets of vertices and arcs of D respectively.

D is an m-coloured digraph if the arcs of D are colored with m colors.

A kernel by monochromatic paths of D is a set $N \subseteq V(D)$ which satisfies the two following conditions:

1. For every $x, y \in N$ there is no monochromatic directed paths between them.

2. For every $y \in V(D) - N$ there exists a yN-monochromatic directed path.

In 1982 Sands, Sauer and Woodrow proved that every 2-coloured digraph has a kernel by monochromatic paths.

In this talk we study sufficient conditions for the existence of a kernel by monochromatic paths in m-coloured digraphs satisfying the following condition: For each $x \in V(D)$, $\{a \in A(D) | a$ incides from (or toward) $x\}$ is at most 2-coloured.

The main result obtained generalyzes the classical result by Sands, Sauer and Woodrow.

Keywords: kernel by monochromatic paths, m-coloured digraph.

AMS Subject Classification: 05C20.