KERNELS BY H-WALKS IN THE $R_H(D)$ DIGRAPH

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Let H be a digraph possibly with loops and let D be a digraph whose arcs are colored with the vertices of H (this is what we call an H-colored digraph). A walk in D will be called and H-walk if the colors displayed on the walk also form a walk in H. In this talk we consider kernels by H-walks. $N \subseteq V(D)$ is a kernel by H-walks if and only if N is independent by H-walks, which means that for every two different vertices in N there is no H-walk in D joining them, and N is absorbent by H-walks which guarantees that for every v in $V(D)-N$ there exists an H-walk in D from v to N. This concept generalizes the concept of kernel by monochromatic paths.

In this work we consider some operations on H-colored digraphs, we call $R_H(D)$ and $R'_H(D)$, and we prove the existence of kernels by H-walks in possibly infinite H-colored digraphs for every H which is a possibly infinite digraph. Also we consider some sufficient conditions for the uniqueness of kernels by H-walks.

Keywords: Restricted domination, subdivision digraph, H-walk.

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