

IDENTIFYING CODES IN DIGRAPHS

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In most application of identifying codes it is natural to consider only a directed graph. Here we would like to uniquely identify each vertex by the set of vertices from the code that sees the chosen vertex as an out-neighbour. We classify all directed graphs that admits the whole set of vertices as the only identifying code.

We use Bondy's theorem on induced set that says: if A_1, A_2, \dots, A_n are distinct subsets of an n -set we can find an element x such that $A_1 - x, A_2 - x, \dots, A_n - x$ are all distinct. Then as an application of our work, we classify all the set systems not including the empty set, such that we can apply Bondy's theorem on it without producing an empty set.