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Identifying Codes on De Bruijn Graphs. Preliminary report.

De Bruijn graphs are an interesting type of directed graphs. Their vertex set consists of d -ary n -tuples, and a directed edge exists from string X to string Y if and only if the last $(n - 1)$ letters of X are the first $(n - 1)$ letters of Y , in order. Using basic string operations, many generally NP-hard problems have simple constructions when considered on the class of de Bruijn graphs. In this talk, we consider one such problem: the minimum identifying code problem. The minimum identifying code problem is closely related to the minimum dominating set problem, but includes extra conditions requiring that each vertex in the graph is dominated by a different subset of the dominating set.

This is joint work with Dr. Debra Boutin of Hamilton College. (Received August 11, 2014)