

Results on Recursive Generation of de Bruijn Sequences

Travis Alan Baumbaugh, Clemson University

In a generalization of the work of Alhakim and Akinwande, we examine a recursive method of joining lifts of Hamiltonian cycles from $B(2, n)$ in $B(2, n + 1)$. The goal is to generate additional de Bruijn sequences while also modifying the method to generate each additional digit on the fly. A particular adjacency matrix representation is introduced, followed by a more compact representation and results on acceptable edge choices.

Keywords: de Bruijn sequence, recursive algorithm, adjacency matrix