

Abstract.

We introduce the notion of unavoidable (complete) sets of word patterns, which is a refinement for that of words, and study certain numerical characteristics for unavoidable sets of patterns. In some cases we employ the graph of pattern overlaps introduced in this paper, which is a subgraph of the de Bruijn graph and which we prove to be Hamiltonian. In other cases we reduce a problem under consideration to known facts on unavoidable sets of words. We also give a relation between our problem and intensively studied universal cycles, and prove there exists a universal cycle for word patterns of any length over any alphabet.

Keywords: pattern, word, (un)avoidability, de Bruijn graph, universal cycles