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Title: A novel test for unique decipherability of codes

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Having a set C of codewords w_i we have to decide whether there are two or more sequences of codewords which form the same chain of characters of codewords. A code C is *UD (uniquely decipherable)* code, if every message has at most one factorization with respect to code C , that is, if $x_1x_2 \dots x_n = y_1y_2 \dots y_m$ holds, where $x_1, x_2, \dots, x_n, y_1, y_2, \dots, y_m \in C$, then $n = m$ and $x_1 = y_1, \dots, x_n = y_n$. We have developed an algorithm that solves this problem by using finite automata in [?]. In this paper we suppose that there is no empty string in the set of coded messages. Thus, we investigate the language C^+ . In these cases the automata have more states, but we get more applicable results.

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