Title: A novel test for unique decipherability of codes

Author(s): János Falucskai

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 $x_1 x_2 \ldots x_n = y_1 y_2 \ldots y_m$ holds, where $x_1, x_2, \ldots, x_n, y_1, y_2, \ldots, y_m \in C$, then $n = m$ and $x_1 = y_1, \ldots, x_n = y_n$. 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.

Address:
János Falucskai
Institute of Mathematics and Informatics
College of Nyíregyháza
Sóstói u. 31/b
H-4400 Nyíregyháza
Hungary