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**Plátek, Martin (CZ-KARLMP-C); Otto, Friedrich (D-UKSL-EIF);**

**Mráz, František (CZ-KARLMP-C)**

**Two-dimensional hierarchies of proper languages of lexicalized FRR-automata. (English summary)**

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A “freely rewriting restarting automaton” (FRR-automaton) is a variant of the linear bounded automaton. It moves its head, which consists of a look-ahead scanning window of fixed length to the right: it can rewrite the content of the window by a shorter word, and next it can continue its computation at the leftmost symbol of the right unchanged part of the tape, or it can restart (move the head to the leftmost cell and enter the initial state). FRR-automata are used in analyzing natural languages: they simplify iteratively a given sentence of the “characteristic language” (which is obtained from the sentences of the “proper language” by inserting auxiliary symbols for the syntactic categories), while the (in)correctness of the sentence is not affected.

For some restricted deterministic FRR-automata the authors study the effect of two parameters on the language accepting power: (1) the number of rewrites per cycle (i.e., in between two restarts), and (2) the number of auxiliary symbols that may appear on the tape at the same time. In each case considered, this results in two-dimensional hierarchies of language families in between the deterministic context-free languages and the context-sensitive languages: all inclusions in these hierarchies are proper, except for one which remains open.

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*Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.*

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