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Masopust, Tomáš (CZ-AOS2)

Regulated nondeterminism in pushdown automata: the non-regular case. (English summary)

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The author studies pushdown automata which are allowed to make a nondeterministic step in their computation if and only if their pushdown content consists of a string that belongs to a given control language over the pushdown alphabet. M. Kutrib, A. Malcher and L. Werlein [Theoret. Comput. Sci. **410** (2009), no. 37, 3447–3460; [MR2553021 \(2011e:68084\)](#)] showed that regular control does not increase the accepting power of these automata.

The author proves that for linear context-free control languages these machines are as powerful as Turing machines. This computational completeness is preserved even when the number of checks of the pushdown content is restricted to two. Reducing this number to one results in a machine model, more powerful than the pushdown automaton, of which the exact accepting capacity is still unknown.

Reviewed by *Peter R. J. Asveld*

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