Prednáška

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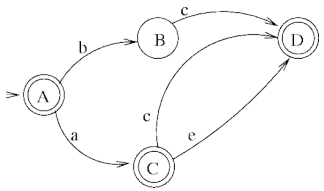

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Simulating unary context-free grammars and pushdown automata with finite automata

Abstrakt

It is well-known that context-free languages defined over a one-letter alphabet are regular. This implies that unary context-free grammars and unary pushdown automata are equivalent to finite automata.

In this talk, we discuss this equivalence from a descriptional complexity point of view, by presenting tight simulations of unary context-free grammars and pushdown automata with finite automata. There is an important consequence in space complexity: in order to accept nonregular unary languages, one-way auxiliary pushdown automata must use space at least *log log n*, even under the *weak space* measure. We also discuss some extensions of these results to the case of bounded languages.

Pozývame všetkých študentov a zamestnancov UPJŠ.