ON SUBREGULAR SELECTION LANGUAGES IN INTERNAL CONTEXTUAL GRAMMARS

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ABSTRACT
In this paper, we study the power of internal contextual grammars with selection languages from subfamilies of the family of regular languages. If we consider families \( F_n \) which are obtained by restriction to \( n \) states, nonterminals, productions, or symbols to accept or to generate a regular language, we obtain four infinite hierarchies of the corresponding families of languages generated by internal contextual grammars with selection languages in \( F_n \). Moreover, we present some results on the power of internal contextual grammars with finite, monoidal, nilpotent, combinational, definite, ordered, regular commutative, regular circular, regular suffix-closed, and union-free selection languages.

Keywords: Internal contextual grammars; subregular selection languages.

1. Introduction

Contextual grammars were introduced by Solomon Marcus in [8] as a formal model that might be used for the generation of natural languages. We refer to [10, 9, 4] and the references therein for details on contextual grammars. The derivation steps

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