

[Meduna, Alexander](#)

Four-nonterminal scattered context grammars characterize the family of recursively enumerable languages. (English) [Zbl 0865.68075](#)

[Int. J. Comput. Math.](#) 63, No. 1-2, 67-83 (1997).

A formal language is called *recursively enumerable* if it is a recursively enumerable subset in the set of all possible words over the alphabet of the language. Mathematical linguistics has characterized the family of recursively enumerable languages by various grammars with a reduced number of nonterminal [J. Dassow and G. Paun, Regulated rewriting in formal language theory. Berlin etc.: Springer-Verlag; Berlin (GDR): Akademie-Verlag (1988; [Zbl 0697.68067](#)), Chapter 4]. In particular, the author characterized the family by five-nonterminal scattered grammars [[A. Meduna](#), [Acta Inf.](#) 32, No. 3, 285–298 (1995; [Zbl 0824.68070](#)), Theorem 7]. This paper characterizes the family by scattered context grammars with only four nonterminals. In addition, it characterizes the family by three-nonterminal scattered context grammars starting their derivations from a word rather than a symbol.

Reviewer: [Hirokazu Nishimura \(Tsukuba\)](#)

MSC:

[68Q42](#) Grammars and rewriting systems

Cited in **6** Documents

Keywords:

[recursively enumerable languages](#); [scattered context grammars](#)

Full Text: [DOI](#)

References:

- [1] Dassow J., Regulated Rewriting in Formal Language Theory (1989)
- [2] DOI: [10.1007/BF00264281](#) · [Zbl 0541.68048](#) · doi:[10.1007/BF00264281](#)
- [3] DOI: [10.1007/BF01178263](#) · [Zbl 0824.68070](#) · doi:[10.1007/BF01178263](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.