

**MR2311438 (2008b:68057) 68Q42****Bensch, Suna (D-PTDM-II); Bordihn, Henning (D-PTDM-II)****Active symbols in pure systems. (English summary)***Fund. Inform.* **76** (2007), *no. 3*, 239–254.

The authors study (statically measured) “active symbols”—i.e., symbols that can be rewritten non-identically only—in context-independent L-systems (TOL, DTOL, their restrictions and generalizations) as well as in cooperating distributed context-free (or CD) grammar systems. These rewriting systems are “pure” in the sense that no distinction is made between terminal and nonterminal symbols.

Setting a bound  $n$  on the number of active symbols gives rise to an unbounded hierarchy of language families as this descriptive complexity measure  $n$  increases; this holds for each type of rewriting system under consideration. The structure of the Chomsky-Lindenmayer hierarchy is preserved when the attention is restricted to the corresponding bounded language families with  $n$  fixed. Finally, numerous (non-)closure results with respect to the usual language-theoretic operations are established for these bounded language families.

Reviewed by *Peter R. J. Asveld*

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