

Commentationes Mathematicae Universitatis Carolinae

N. V. Ngoc

The problems of complexity of almost context-free languages
[Abstract of thesis]

Commentationes Mathematicae Universitatis Carolinae, Vol. 30 (1989), No. 1,
202

Persistent URL: <http://dml.cz/dmlcz/106735>

Terms of use:

© Charles University in Prague, Faculty of Mathematics and Physics, 1989

Institute of Mathematics of the Academy of Sciences of the Czech Republic provides access to digitized documents strictly for personal use. Each copy of any part of this document must contain these *Terms of use*.



This paper has been digitized, optimized for electronic delivery and stamped with digital signature within the project *DML-CZ: The Czech Digital Mathematics Library*
<http://project.dml.cz>

THE PROBLEMS OF COMPLEXITY OF ALMOST
CONTEXT-FREE LANGUAGES

N.V.Ngoc, The Institute of Cybernetics and Computer Science, Hanoi, Vietnam
(14.12.1988, supervisor M.Chytil)

The chief aim of this dissertation is to study the time and space complexity of almost context-free languages. The main results of this dissertation show that in comparison with analysis of context-free languages, the time necessary for recognizing almost context-free languages by random access machines increases by the factor $\log(\log \log)^4$ using the Cocke-Younger-Kasami's method and by the factor $\log(\log \log)^{14}$ using Early's method. The upper bound for space complexity of almost context-free language recognition is proved to be \log^2 .

The thesis also contains several examples of approximation of languages by sequences of context-free grammars.