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[Abstract of thesis]

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THE PROBLEMS OF COMPLEXITY OF ALMOST  
CONTEXT-FREE LANGUAGES

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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.