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existence proofs: of an approximate solution and of a limit to the sequence formed by the approximate solutions. The limit is a solution of the boundary value problem in a weak sense, too.

Numerical realization of the discrete problem is the application of the least square method and the conjugate gradient method. Some computed results are compared with those obtained by another similar numerical model of an ideal fluid flow and with experimental data. Finally, on the basis of this comparison, the areas of the practical application of the model described are defined.

AN ERROR RECOVERY METHOD FOR TRANSLATIONS OF LL(1)-LANGUAGES

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The thesis is devoted to the study of error recovery methods for a syntactical analysis of deterministic context-free languages. It describes a new recovery method using the so-called skeletal set which is applicable to a top-down syntactical analysis of LL(1)-languages. The work contains a complete description of the method, a theoretical proof of its correctness and also all necessary algorithms for the realization of the method including their time efficiency estimates.

The starting point of this thesis is a general case of the error recovery method using the skeletal set presented by Chytil and Demner two years ago. The algorithms for the construction of recovery tables are very slow and complicated in the general case. Therefore they are not usable in practice in compilers. The creation of some important improvements of the original general method is the first result of this thesis. Using these new improvements, the process of the error recovery is more fast and simple.

The main contribution of this work is development of the recovery method for the case of LL(1)-languages. New efficient polynomial time consuming algorithms are created and described. Using our algorithms, the new error recovery method can be easily realized in compilers. The generation of all necessary recovery tables is then fully automatic.

The use of the new error recovery method in a compiler brings many advantages in comparison with other methods. The error recovery process is very fast. The syntactical analysis of correct parts in a compiled program is not delayed by our recovery method. The error messages ar very exact and intelligible. Any possibility of a compiler collapse during the syntactical analysis or announcements of non-existent syntactic errors are fully eliminated.

The next result of this thesis is the creation of some programs realizing all developed algorithms. These programs show how easy is the program realization of the new error recovery method.