

Hierarchical graph is such a representation of a graph which makes explicit a given set of its nested subgraphs [1]. Hierarchical graphs are suited for visual processing and can be used for efficiently handling complex flow analysis and program optimization problems [2].

In the paper hierarchical graph models of imperative and functional programs are considered. We present methods and tools for visual processing of hierarchical graph models and describe how they can be used in the functional programming environment SFP for rapid development of high quality, portable, parallel algorithms for supercomputers. The SFP system is intended for construction of correct parallel programs by isolating the programmer from the complexities of parallel processing. Its input language is a functional language (Sisal 3.0) that exposes implicit parallelism through data dependence and guarantees determinate result. The SFP system identifies and exploits the parallelism inherent in the program, appropriate to the target execution platform, and also guarantees determinate behavior.

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References

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2. Kasyanov V.N., Evstigneev V.A. Graphs in Programming: Processing, Visualization and Application, St.Peterburg, BHV-Peterburg, 2003, 1104 P.