The generation of optimized code continues to be a very attractive research area. The potential processing power of new parallel architectures and the development of declarative languages have acted as a catalyst for the growing interest in this area: the efficient execution of application programs written in declarative languages and the migration of sequential programs to parallel machines are typical examples of current investigation topics.

Three papers dealing with the generation and optimization of object code for novel computer architectures will be presented in this session.

The first paper, *Effective SIMD Code Generation for the High-Level Declarative Data-Parallel Language 8 1/2*, by D. De Vito and O. Michel, presents an effective code-generation scheme for a declarative language which is oriented to sequential and SIMD machines. The data-parallel language is suitable for modeling dynamic systems, and through the use of two optimization techniques, the authors achieved significant speedup ratios during the simulation of a typical application program.

The second paper of the session, *Optimising Pseudoknot in ICMC*, by G.G. da Cruz Neto, R.M.F. Lima, R.D. Lins, and A.L.M. Santos, describes the implementation of the Pseudoknot benchmark in ICMC, a virtual machine for efficient implementation of lazy functional languages. Several optimization techniques were exploited in the experiments described in the paper, and the performance figures obtained with these techniques for three different implementations of the abstract machine are very promising.

The third paper, *Application of the V-Ray Technology for Optimization of the TRFD and FLO52 Perfect Club Benchmarks to CRAY Y-MP and CRAY T3D Supercomputers*, by
A.S. Antonov and V.V. Voevodin, deals with the optimization of two test programs from the Perfect Club Benchmark. The authors employed the V-Ray technique to generate optimized code for two different parallel architectures (vector and massively parallel architectures). The paper presents the performance gains produced by the optimization technique on several parallel machine configurations derived from the CRAY Y-MP and T3D architectures.