Topic 9
Parallel Programming:
Models, Methods and Languages

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Topic Chairs

This topic covers innovative aspects as well as improvements in already known techniques in algorithms, programming models, design methods and languages that relate to the development of parallel programs. In the call-for-papers, we stressed several innovative aspects including novel techniques to assemble parallel software from reusable parallel components or from existing sequential code without compromising efficiency, and techniques to adapt parallel software to available resources as well as to the features of the problem being solved. A total of 36 papers were submitted for this topic and, after reviewing, 10 full papers were accepted (28% rate). We recognized really promising work in many of the papers that could not be accepted and fully encourage the authors to use the referees' suggestions to improve and resubmit their work. The accepted papers will be presented at the conference grouped into four sessions.

The paper by Wise et. al. discusses an innovative approach to the implementation of parallel matrix algorithms and will be presented in the session hosting papers from Topic 4.

A second session hosts papers dealing with parallelism in the context of shared memory machines. Chan et. al. focus on the implementation of asynchronous handlers in co-begin statements in the context of a Java implementation of SR named JR. Wang et. al. describe the design and use of source-level streaming pre-computation techniques to improve the performance of memory-bound scientific applications on SMT processors with limited resources. Nieplocha et. al. deal with the implementation of Cray symmetric objects in Fortan95.

A third session hosts papers discussing the usage of aspect-oriented techniques and of search parallelism. Carvalho Junior and Dueire Lins explore the possibilities offered by aspect-oriented programming to incorporate procedural language computations in the $Haskell_\#$ implementation of the $\#$ programming model. Copy and Ur exploit aspect-oriented programming techniques in the implementation of testing tools. Last, Viet Le and Pontelli describe the implementation of a parallel Answer Set solver using search parallelism.

The last session hosts papers related to structured parallelism. Benoit et. al. discuss how skeletons can be exploited using the eSkel. Aldinucci et. al. describe experiments in automatic adaptation of structured parallel code to changes in the target architecture features. González-Escribano et. al. describe an XML based intermediate representation for nested-parallel programming languages.