

HPTS: Heterogeneous Parallel Tabu Search For VLSI Placement

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Evolutionary Computation, 2002. CEC '02. Proceedings of the 2002 Congress on;Publication Date: 12-17 May 2002;Vol: 1,On page(s): 351-355;ISBN: 0-7803-7282-4

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Summary

Parallelizing any algorithm on a cluster of heterogeneous workstations is not easy, as each workstation requires different wall clock time to execute the same instruction set. In this work, a parallel tabu search algorithm for heterogeneous workstations is presented using PVM. Two parallelization strategies, i.e., functional decomposition and multi-search thread strategies are integrated. The proposed algorithm is tested on the VLSI standard cell placement problem, however, the same algorithm can be used on any combinatorial optimization problem. The results are compared ignoring heterogeneity and are found to be superior in terms of execution time

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