Parallel Computing and Optimization Workshop – PCO

Workshop Theme

The workshop on new trends in Parallel Computing and Optimization aims at providing a forum for scientific researchers and engineers on recent advances in the field of parallel or distributed computing for difficult combinatorial optimization problems, like 0-1 multidimensional knapsack problems and cutting stock problems, large scale linear programming problems, nonlinear optimization problems and global optimization problems. Emphasis will be placed on new techniques for the solution of these difficult problems like cooperative methods for integer programming problems and polynomial optimization methods. Aspects related to Combinatorial Scientific Computing (CSC) will also be treated. Finally, the use of new approaches in parallel computing like GPU or hybrid computing, peer to peer computing and cloud computing will be considered. Application to planning, logistics, manufacturing, finance, telecommunications and computational biology will be considered. Topics considered include:

- Integer programming, linear programming, nonlinear programming.
- Global optimization, polynomial optimization.
- Exact methods, heuristics
- Parallel algorithms for combinatorial optimization.
- Parallel metaheuristics.
- Distributed optimization algorithms.
- Graph partitioning, preconditioning, Combinatorial Scientific Computing,
- Hybrid computing and the solution of optimization problems.
- Peer to peer computing and optimization problems.
- Applications: planning, logistics, manufacturing, finance, telecommunications, computational biology, combinatorial algorithms in high performance computing.

General Chair

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