New ideas in parallel Particle Swarm Optimization

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Abstract

In global optimization there are techniques where they find the optimal solutions of the objective problems but waste a lot of computational time. The PSO parallelization technique proposed in this article significantly reduces the computation time and at the same time participates in the solution finding algorithm with the iterative communication between the parallel computing units. In addition, a new and more appropriate termination rule is proposed here. From the results of the experiments it appears that the overall parallelization technique is more than an accelerator of the classical algorithm.

Keywords: Optimization, Parallel methods, Evolutionary techniques, Stochastic methods, Termination rules