A multi-swarm cellular PSO based on clonal selection algorithm in dynamic environments

ABSTRACT

Many real-world problems are dynamic optimization problems. In this case, the optima in the environment dynamically. Therefore, traditional optimization algorithms disable to track and find optima. In this paper, a multi-swarm cellular particle swarm optimization based on clonal selection algorithm (CPSOC) is proposed for dynamic environments. In the proposed algorithm, the search space is partitioned into cells by a cellular automaton. Clustered particles in each cell, which make a sub-swarm, are evolved by the particle swarm optimization and clonal selection algorithm. Experimental results on Moving Peaks Benchmark demonstrate the superiority of the CPSOC its popular methods.

INDEX TERMS

Index Terms are available to subscribers and IEEE members.