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

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ABSTRACT

Many real-world problems are **dynamic** optimization problems. In this case, the optima in the **environment** change dynamically. Therefore, traditional optimization **algorithms** are unable 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 over its popular methods.

INDEX TERMS

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