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

This paper appears in:

Informatics, Electronics & Vision (ICIEV), 2012 International Conference on

Date of Conference: 18-19 May 2012

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Page(s): 482 - 486

Product Type: Conference Publications

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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 popular methods.

INDEX TERMS

Index Terms are available to subscribers and IEEE members.

Additional Details

On page(s): 482

Conference Location : Dhaka, Bangladesh

Print ISBN: 978-1-4673-1153-3

Digital Object Identifier : 10.1109/ICIEV.2012.6317524

Date of Current Version : 04 October 2012

Issue Date : 18-19 May 2012

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