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综述·探索

多目标差分演化算法研究综述

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摘要 多目标差分演化算法是一种简单有效的演化算法，已引起学术界的广泛关注，并在许多领域得到应用。首先描述了差分演化算法的基本思想；接着分析了有代表性的多目标差分演化算法，并给出了改进多目标差分演化算法的一些措施；然后讨论了多目标差分演化算法的性能度量指标，并介绍了多目标差分演化算法的一些应用领域；最后，指出了多目标差分演化算法今后的研究方向。

关键词 多目标优化 差分演化 演化算法 Pareto前沿

分类号

A Survey of Multi-objective Differential Evolution Algorithms

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Abstract

Multi-objective differential evolution algorithm is a simple and effective evolutionary algorithm for multi-objective optimization， which has been attracted much increasing interest from academia recently and applied to various fields successfully. Firstly， the basic idea of differential evolution is introduced， and some representative multi-objective differential evolution algorithms are analyzed. Then some effective measures are presented， which can improve the performance of multi-objective differential evolution algorithms. Thereafter， a variety of performance indices for multi-objective differential evolution algorithms are discussed and some typical applications of multi-objective differential evolution algorithms are also mentioned. Finally， some promising paths for future research in this area are pointed out.

Key words multi-objective optimization differential evolution evolutionary algorithm Pareto front

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