

理论研究

基于Pareto最优概念的多目标进化算法研究

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收稿日期 2007-11-9 修回日期 2008-3-18 网络版发布日期 2008-9-18 接受日期

摘要 基于Pareto最优概念的多目标进化算法已成为多目标优化问题研究的主流方向。详细介绍了该领域的经典算法, 重点阐述了各种算法在种群快速收敛并均匀分布于问题的非劣最优域上所采取的策略, 并归纳了算法性能评估中需要进一步研究的几个问题。

关键词 [多目标进化算法](#) [Pareto最优](#) [非劣解排序](#) [适应度共享](#) [精英策略](#) [性能评估](#)

分类号

Research on Pareto optimal-based multiobjective evolutionary algorithms

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Abstract

The Pareto optimal-based multi-objective evolutionary algorithm which is used to deal with multi-objective optimization problems has become a hot research topic. In this paper, some state-of-the-art algorithms in this research field are described firstly. Then, strategies adopted by various kinds of algorithms about finding the non-dominated set of solutions and distribute them uniformly in the Pareto front are elaborated. Lastly, several research points of performance evaluation which need to be further study are summarized.

Key words [multiobjective evolutionary algorithms](#) [Pareto optimal](#) [nondominated sorting](#) [fitness sharing](#) [elitism](#) [performance measure](#)

DOI: 10.3778/j.issn.1002-8331.2008.27.019

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