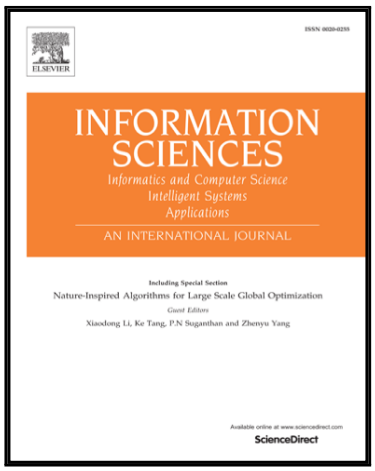


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# Two-archive Method for Aggregation-based Many-objective Optimization

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**Abstract**

In this paper, a novel two-archive method is proposed for solving many-objective optimization problems. Our aim is to exploit the advantages of using two separate archives to balance the convergence and diversity. To this end, two updating strategies based on the aggregation-based framework are presented and incorporated into the two-archive method. In addition, we further extend this method by eliminating the restricted neighbourhood models. The proposed algorithms have been tested extensively on a number of well-known benchmark problems with 3-20 objectives. Experimental results reveal that the proposed algorithms work well on the many-objective optimization problems with different characteristics.

*Keywords:* Evolutionary computation, multi-objective evolutionary algorithms, many-objective optimization, two archives, aggregation-based method.

## 1. Introduction

Multi-objective optimizations (MOPs) have attracted great attention over the last two decades. The primary reason is that some practical applications can

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