### Accepted Manuscript

Title: A Two-Stage R2 Indicator Based Evolutionary Algorithm for Many-Objective Optimization

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## ACCEPTED MANUSCRIPT

#### Highlights

- A two-stage selection strategy has been proposed on the basis of both the R2 indicator and the reference vector guided objective space partition
- An R2 indicator based achievement scalarizing function has been designed for the primary selection
- A reference vector guided secondary selection has been adopted for objective space partition
- An evolutionary algorithm based on the two-stage selection strategy has been developed for many-objective optimization
- Experimental results demonstrate the competitive performance of the proposed evolutionary algorithm in comparison with some state-of-the-art algorithms for many-objective optimization

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