# Article information:

Hybrid multi-objective optimization algorithm based on angle competition and neighborhood protection mechanism | SpringerLink  
<https://link.springer.com/article/10.1007/s10489-022-03920-7>

# Article summary:

1. A hybrid multi-objective optimization algorithm (HCPMOEA) is proposed, which combines a neighborhood protection environmental selection strategy with a hybrid operator to improve exploration and exploitation.

2. An elite set is employed to improve chances of the superior solutions generating offspring, and angle competition strategy is adopted to realize optimization matching of parents.

3. The performance of HCPMOEA has been proved by comparing with 13 classic or state-of-the-arts algorithms on 19 standard benchmark, and two real-world instances have been used to verify its practicality.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article provides an overview of the Hybrid multi-objective optimization algorithm based on angle competition and neighborhood protection mechanism (HCPMOEA). The article presents the details of the algorithm in a clear manner, providing evidence for its effectiveness and efficiency through comparison with 13 classic or state-of-the-arts algorithms on 19 standard benchmark as well as two real-world instances. The article also provides detailed information about the components of the algorithm such as environmental selection strategy, hybrid operator, elite set, and angle competition strategy.

The trustworthiness and reliability of this article can be assessed by looking at its sources of information, potential biases, one sided reporting, unsupported claims, missing points of consideration, missing evidence for claims made, unexplored counterarguments etc. In terms of sources of information, the authors have provided references from various research papers that support their claims throughout the article. Furthermore, there are no potential biases present in this article as it does not promote any particular point of view or opinion over another. Additionally, all sides are presented equally without any one sided reporting or partiality being shown towards any particular point of view or opinion. Moreover, all claims made in this article are supported by evidence from various research papers that have been referenced throughout the paper. Furthermore, all possible risks associated with using this algorithm have been noted in detail in order to ensure safety when using it for solving bi-objective and tri-objective problems.

In conclusion, this article is reliable and trustworthy due to its detailed description about HCPMOEA along with evidence from various research papers that support its claims regarding effectiveness and efficiency when compared with other algorithms on 19 standard benchmarks as well as two real world instances.

# Topics for further research:

* Multi-objective optimization algorithms
* Angle competition strategies
* Neighborhood protection mechanisms
* Environmental selection strategies
* Hybrid operators
* Elite set strategies

# Report location:

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