

Article

EEGO: an extended version of Eel and Grouper optimizer for global optimization problems

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Abstract: The problems of finding a global minimum of a function are increasingly applied to real-world problems. As a result, a variety of computational techniques have been developed to better locate the global minimum. A decisive role is played by evolutionary techniques, which simulate natural processes and aim to find the global minimum of multidimensional functions. A recently introduced evolutionary technique is the optimal Eel and Grouper (EGO) algorithm, which is inspired by symbiotic interaction and foraging strategy of eels and groupers in marine ecosystems. The EGO algorithm is characterized for its reliability in locating the global minimum. In this paper, modifications are proposed that aim to improve the reliability and speed of the above technique, such as the application of a termination technique based on stochastic observations. The proposed method was tested on several problems from the relevant literature and a comparative study was made with other global optimization techniques with promising results.

Keywords: Global optimization; Stochastic techniques; Evolutionary methods; Swarm based methods

Citation: Kyrou, G.; Charilogis, V.; Tsoulos, I.G. EEGO: an extended version of Eel and grouper optimizer for global optimization problems. *Journal Not Specified* **2024**, *1*, 0. <https://doi.org/>

Received:

Revised:

Accepted:

Published:

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4.1.1. Subsubsection

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Text.
Text.

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This is the example 1 of equation:

$$a = 1,$$

(1)

the text following an equation need not be a new paragraph. Please punctuate equations as regular text.

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$$a = b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q + r + s + t + u + v + w + x + y + z$$

(2)

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Abbreviations

The following abbreviations are used in this manuscript:

| | |
|------|--|
| MDPI | Multidisciplinary Digital Publishing Institute |
| DOAJ | Directory of open access journals |
| TLA | Three letter acronym |
| LD | Linear dichroism |

Appendix A

Appendix A.1

The appendix is an optional section that can contain details and data supplemental to the main text—for example, explanations of experimental details that would disrupt the flow of the main text but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data are shown in the main text can be added here if brief, or as Supplementary Data. Mathematical proofs of results not central to the paper can be added as an appendix.

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5. Author 1, A.B. (University, City, State, Country); Author 2, C. (Institute, City, State, Country). Personal communication, 2012.

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