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Article

Implementing a series of modifications for the Eel and grouper optimizer for global optimization problems

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Abstract: Global optimization is used in many practical and scientific problems. For this reason, various computational techniques have been developed. Particularly important are the evolutionary techniques, which simulate natural phenomena with the aim of detecting the global minimum in complex problems. A new evolutionary method is the Eel and Grouper Optimization (EGO) algorithm, inspired by the symbiotic relationship and foraging strategy of eels and groupers in marine ecosystems. In this work, modifications of this technique are proposed, such as the use of a termination technique based on stochastic observations. The proposed modifications have been tested on multidimensional functions available from the relevant literature and compared with other evolutionary methods.

Keywords: Global optimization; Metaheuristic algorithms; Stochastic methods; Evolutionary algorithms; Swarm algorithms; Termination strategies; Sampling techniques.

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