Quantum Entanglement inspired Grey Wolf optimization algorithm and its application

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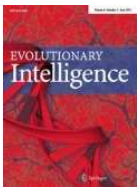

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Abstract

Meta-heuristic optimization algorithms are becoming increasingly popular for their simplicity and efficiency. Grey wolf Optimizer (GWO) is one such effective algorithm that was proposed recently. It has been researched extensively owing to its impressive characteristics—easy to understand and implement, few parameters to be tuned, capability to balance exploration and exploitation and high solution accuracy. But in solving high dependence or complex optimization problems, GWO can stagnate into local optima owing to poor exploration strategy and can converge prematurely. To overcome these drawbacks of GWO, we propose Quantum Entanglement enhanced Grey Wolf Optimizer (QEGWO). Quantum Entanglement is particularly useful in significantly improving the treatment of multimodal and high dependence problems.