

**POWER GENERATION ALLOCATION IN SMART GRID USING  
DWARF MONGOOSE OPTIMIZATION**

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## **ABSTRACT**

Dwarf Mongoose Optimization (DMO) is a new metaheuristic algorithm that published in 2022 by Jeffrey O. Agushaka, Absalom E. Ezugwu and Laith Abuligah. DMO is inspired by the social and adaptive behaviours of Dwarf Mongoose which imitates their collective decision-making and foraging strategies for its algorithms. This method is frequently used for solving optimisation problems which designed to minimize or maximize specifics objectives. A real-word problem where DMO could be used is optimization energy allocation within power generation system. This study focusses on implementing DMO to optimize energy generation system which aiming to minimize the cost of nine energy sources while satisfying demand constraint. By applying real-world data from U.S. Energy Information Administration EIA website, DMO demonstrates its ability to find the best solution while including the updates bounds and cost parameters of various energy sources. The results show that the population size on mongoose is an important factor in finding optimal solution. The findings highlight the potential of DMO in solving optimization problem particularly in optimizing energy generation system.

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