



# Honey-bee mating optimization (HBMO) algorithm for optimal reservoir operation

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## Abstract

In recent years, evolutionary and meta-heuristic algorithms have been extensively used as search and optimization tools in various problem domains, including science, commerce, and engineering. Ease of use, broad applicability, and global perspective may be considered as the primary reason for their success. The honey-bee mating process has been considered as a typical swarm-based approach to optimization, in which the search algorithm is inspired by the process of real honey-bee mating. In this paper, the honey-bee mating optimization (HBMO) algorithm is presented and tested with a nonlinear, continuous constrained problem with continuous decision and state variables to demonstrate the efficiency of the algorithm in handling the single reservoir operation optimization problems. It is shown that the performance of the model is quite comparable with the results of the well-developed traditional linear programming (LP) solvers such as LINGO 8.0. Results obtained are quite promising and compare well with the final results of the other approach.

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*Keywords:* Honey-bee mating optimization; Single reservoir; Optimal operation; Continuous domain

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