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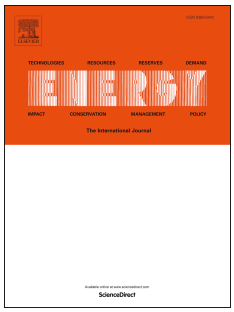

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A Comparative Evaluation of Gravitational Search Algorithm (GSA) against Artificial Bee Colony (ABC) for Thermodynamic Performance of a Geothermal Power Plant

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ABSTRACT

Optimizing a complex system/problem under real working conditions with optimization methods means ensuring that they operate more efficiently, economical, and eco-friendly. For this purpose, in order to maximize the exergy efficiency of a thermodynamic model of a real operated geothermal power plant (GPP), two optimization methods, namely Gravitational Search Algorithm (GSA) and Artificial Bee Colony (ABC), have been comparatively evaluated in this study. The selected thermodynamic model is a problem that is highly complex, non-linear and unsolvable through mathematical methods. In order to solve the problem, 17 optimization parameters have been selected on the model. In addition, the selected parameters have been divided into 11 groups according to the system equipment specifications to reduce