Whale Optimization Algorithm Microgrid Optimization

Can enhanced whale optimization algorithm improve energy storage capacity configuration of microgrids?
In response to the adverse impact of uncertainty in wind and photovoltaic energy output on microgrid operations, this paper introduces an Enhanced Whale Optimization Algorithm (EWOA) to optimize the energy storage capacity configuration of microgrids. The objective is to ensure stable microgrid operation and enhance system economy.

Can whale optimization algorithm reduce battery life loss in hybrid energy storage systems?
This study introduces a Whale Optimization Algorithm (WOA)-based frequency-based method (FBM) for hybrid energy storage systems (HESS), reducing battery life loss and voltage fluctuations. The propos...

Can whale optimization improve Hess operation?
This article proposes an optimized FBM control approach using the whale optimization algorithm (WOA) to improve HESS operation. The method optimizes two key variables: current sharing coefficients and the smoothing constant, enabling continuous HESS functionality.

Can a grey wolf optimization algorithm improve energy storage capacity?
In recent years, a considerable number of research works have been dedicated to the optimization of energy storage for microgrids. Reference used an improved grey wolf optimization algorithm to optimize energy storage capacity, which effectively improved the wind and light abandonment phenomenon.

To address this, the proposed EMS employs an Improved Whale Optimization Algorithm (IWOA), incorporating a nonlinear swimming parameter and Lévy flight mechanism to prevent ...

Yixing et al. [33] proposed an improved whale optimization algorithm (IWOA) with an adaptive weight strategy and a Levy flight trajectory based on the original whale optimization ...

In response to the adverse impact of uncertainty in wind and photovoltaic energy output on microgrid operations, this paper introduces an Enhanced Whale Optimization Algorithm(EWOA) ...

A microgrid is a local electricity network that supplies electrical energy to the local community from various distributed generation (DG) systems. It can be operated independently or in ...

In this paper, we use the modified whale algorithm to solve the microgrid optimization problem. First, we set the economic cost and environmental cost as two modeling objectives. ...

This study introduces a Whale Optimization Algorithm (WOA)-based frequency-based method (FBM) for hybrid energy storage systems (HESS), reducing battery life loss and voltage ...

In order to realize the optimal operation of the grid-connected microgrid, a multi-objective optimal operation model with economical and environmental friendliness is established. Secondly, an ...

Whale Optimization Algorithm Microgrid Optimization

A Multi-Strategy Enhanced Whale Optimization Algorithm for Long Short-Term Memory--Application to Short-Term Power Load Forecasting for Microgrid Buildings Lili Qu, ...

Subsequently, to rectify the intrinsic limitations of the conventional beluga whale optimization (BWO) algorithm, this paper proposes a multi-strategy hybrid improvement to BWO ...

The inherent variability of renewable generation and fluctuating grid prices pose significant challenges to maintaining supply-demand balance. To address this, the proposed EMS employs an Improved ...

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