Microgrid Learning Methods

This study presents a simulation-based and adaptive reinforcement learning (RL)-based energy management framework that addresses persistent inefficiencies in coordinating diverse ...

Model-free reinforcement learning (MFRL) has emerged as a promising paradigm for adaptive, intelligent control without the need for explicit system modeling.

This paper aims to utilize reinforcement learning methods to develop a novel and efficient energy management optimization system for microgrid hybrid energy storage systems.

Deep Reinforcement Learning (DRL), a subset of artificial intelligence, holds the potential to revolutionize the control and management of microgrids. This systematic review aims to provide a ...

Abstract--We propose a novel Model Predictive Control (MPC) scheme based on online-learning (OL) for microgrid energy management, where the control optimisation is embed-ded as the last layer of ...

To tackle this issue, we propose a novel multi-objective reinforcement learning framework that explores the high-dimensional objective space and uncovers the tradeoffs between conflicting objectives.

Microgrids are being considered to be very crucial in enhancing the involvement of renewable energy sources (RESs) in electrical grids and also improving their overall sustainability ...

This paper presented a comprehensive evaluation of reinforcement learning (RL)-based machine learning strategies tailored for advanced microgrid energy management, with a particular ...

Microgrids (MGs) provide a promising solution by enabling localized control over energy generation, storage, and distribution. This paper presents a novel reinforcement learning (RL)-based ...

These AI models maximize the use of renewable energy, reduce wastage, and improve microgrid resilience and responsiveness to supply and demand fluctuations. Experiments ...

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