Grid reinforcement micro-meteorology

This paper aims to provide readers with insights into the effects of micro-meteorology on power systems, as well as the actual improvement brought by micro-meteorology in some power ...

Building on this, we proposed a cooperative multi-agent deep reinforcement learning (MADRL)-based EMS framework to provide flexible scalability for microgrids, enhance resilience and reduce ...

Well-designed energy management systems (EMS) have made progress in improving microgrid resilience through the coordination of distributed energy resources (DERs), but still face ...

Two case studies on a 33-bus microgrid with integrated renewable energy sources demonstrate the framework"s effectiveness under normal and HILF conditions. The uncertainties in ...

This paper investigates the performance of a grid-connected inverter in a hybrid microgrid and compares different controllers, including Artificial Neural Network (ANN), Adaptive Neuro-Fuzzy ...

To mitigate these challenges, this study introduces a resilience enhancement framework for distribution systems based on robust safe reinforcement learning (RSRL), which exploits the ...

Techniques such as deep reinforcement learning and imitation-based control have demonstrated potential for enabling real-time, adaptive decision-making tailored to rapidly evolving microgrid ...

Therefore, this study proposes a method for micro-meteorological analysis and prediction of power grid environments based on micro sensors, aiming to provide strong support for the safe ...

This paper proposes a new parallelized reinforcement learning (PRL) method based on the probabilistic events to handle the microgrid energy uncertainties.

While renewable energy sources provide significant advantages, solar power heavily depends on weather

conditions, which makes it changeable and sometimes unreliable. ...

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