Time-controlled solar power generation

This paper is an attempt towards applying the intelligent data analytics approaches to solar PV generation of a real-time photovoltaic plant. The main purpose of the data analytics platform ...

The study focuses on utilizing machine learning (ML) methodologies for accurate forecasting of solar power generation, addressing challenges related to integrating renewable energy ...

This research proposes a novel AI-enhanced hybrid solar energy framework integrating spatio-temporal forecasting, adaptive control, and decentralized energy trading.

CNNs extract spatial patterns from weather data, LSTMs capture temporal dynamics in solar energy production, and RF combines their outputs for more accurate forecasts.

In this paper, super-short-term prediction of solar power generation for applications in dynamic control of energy system has been investigated. In order to follow and satisfy the dynamics ...

The real-time control and monitoring system for PV arrays presented in this paper not only advances the technical capabilities of solar energy management but also offers tangible benefits ...

By analyzing power generation data and employing advanced ML models, the research aims to enhance the efficiency and predictability of solar energy systems. The significance of this study lies in its ...

Despite a slight decrease in predictive precision with the expansion of the forecast horizon, the proposed AI-based framework consistently surpasses the persistent model, particularly ...

In this paper, the impact of solar PV penetration on large interconnected power system frequency response and inter-area oscillation is evaluated, taking the United States Eastern Interconnection ...

This study assesses the appropriateness of ML approaches for accurately projecting solar power generation in

half-hourly cycles for the next day.

Web: https://www.brukarstwoslusakowicz.pl