

PHAROS Training Series - Course 10 "Time-Series Forecasting and Renewable Energy"

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Forecasting Renewable Energy Production Using Machine Learning

Friday, 10 July 2026 12:40 (50 minutes)

This presentation focuses on a practical application of Machine Learning and Deep Learning in renewable energy forecasting. Through Day-Ahead forecasting of solar energy production, the discussion covers the complete data pipeline, detailing how meteorological and historical records are processed to train predictive ML models. Particular emphasis is placed on Deep Learning approaches such as Neural Networks. Additionally, the role of Aggregators (FOSE) in the modern energy market is examined to emphasize the real-world value of accurate forecasting. Finally, a first version of an intuitive User Interface, currently under development to manage the entire application pipeline, is presented, offering a complete end-to-end perspective from raw data to the final user experience. The presentation also includes a hands-on demonstration, showcasing how a pre-trained Deep Learning model is used to perform inference and generate solar energy production forecasts.

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