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SOLAR POWER FORECAST

The challenge: Solar energy is a challenge topic for the system operator because of the high variability of the production, due to cloud coverage. It's located mainly in the distribution network, far from the observability of the TSO.

HOW WE APPROACH IT

Several mesoscale models (MM5, WRF) are used to forecast the solar radiation and other meteorological parameters for the next week. Algorithms are used to convert solar radiation to power and power limitation is included when there is maintenance work on the network. For the short-term forecast, the real-time production from the SCADA system is used. Sky camera and satellite photos are used to improve the cloud index. Combination of several forecast are used to improve the final forecast. Probabilistic analysis is also used to define the confidence interval. Upscaling to national level is also performed. The average error is 7% related to total forecasted power. This tool is currently being employed by an European TSO.



Relevant Publications

Patent pending "Solar photovoltaic power forecast system with power limitation by set-points".

Contact us

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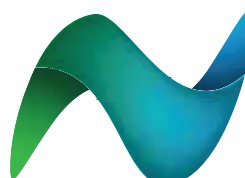
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