Universität Bremen

ZeSOB

CARL VON OSSIETZKY universität OLDENBURG

Sommersemester 2017

Einladung zum ZeSOB Kolloquium

Am Montag, **12. Juni 2017, um 16:15 c.t.** sprechen

Frau Dr. Annette Hammer

(Energiemeteorologie, Institut für Physik, Universität Oldenburg)

über

Forecasting PV power for the German electrical power system – an introduction

The growth of installed photovoltaic (PV) power capacity in recent years has emerged an increasing interest in high quality forecasts. At University of Oldenburg such forecasts are operationally calculated by Energy Meteorology Group for the German Transmission System Operators.

The most common ways to predict PV power output are

- applying statistical approaches to PV measurements
- calculating future outputs of a PV module with known specification applying a PV simulation model to irradiance forecasts.

For irradiance forecasts numerical weather predictions and satellite-based cloud motion vector forecasts are combined for forecasts horizons ranging from the next hours to a few days ahead.

In a recent PhD research a statistical learning model, i.e. support vector regression, has been implemented for PV power forecasting and compared to the physical modeling approach.

A short overview about the deterministic and statistical models is presented. Situations with low forecast accuracy are shown to give ideas for model improvement.

In the discussion we want to find out about other suitable statistical approaches that may be useful in PV power forcasting.

Literature:

[1] Wolff, B., J. Kühnert, E. Lorenz, O. Kramer, D. Heinemann, 2016: *Comparing support vector regression for PV power forecasting to a physical modeling approach using measurement, numerical weather prediction, and cloud motion data.* Solar Energy, Volume 135, October 2016, Pages 197-208, ISSN 0038-092X, doi:10.1016/j.solener.2016.05.051.

[2] Hammer, A., J. Kühnert, K. Weinreich, E. Lorenz, 2015: *Short-Term Forecasting of Surface Solar Irradiance Based on Meteosat-SEVIRI Data Using a Nighttime Cloud Index.* Remote Sensing 7, Nr. 7: 9070. doi:10.3390/rs70709070.

Der Vortrag findet statt am Montag, 12. Juni 2017, um 16 Uhr c.t. im Raum W03 1-152 am Campus Wechloy der Uni Oldenburg, Carl-von-Ossietzky-Straße 9-11, 26129 Oldenburg.

Alle Interessierten sind herzlich willkommen!

(Einladungsvorschlag von Prof. Dr. Peter Ruckdeschel)