P E A R L P V

WG 1: PV Monitoring

Program for WG1 Workshop
Scheduled from 26 February (13:30-17:00h) to 27 February (9:30-17:00h)

Contact person: Wilfried van Sark
E-mail address: W.G.J.H.M.vanSark@uu.nl

Description
Working group 1 on PV monitoring is organizing several sessions as part of the PEARL-PV workshops in Lisbon. Overarching topic is *"Review of PV performance data and analysis"*.

Selected WG1 participants and others working in the field of PV monitoring and performance analysis will present their most recent work. This includes work in progress as we would like to identify potential topics for collaboration, which could materialize in Short Term Scientific Mission proposals.

Tuesday 26 February 2019 (13:30-17:00h)

13:30-14:30h   **Plenary meeting** (Room: C6.2.56)

14:30-15:00h   Coffee break

15:00 – 17:00h   **WG1 meeting** (Room: C1-FFCUL)

15:00-15:10h   Welcome and introduction to WG1 meeting,
Wilfried van Sark, Utrecht University

15:10-15:30h   The Pearl-PV databank
Dijana Capeska Bogatinoska, University for Information Science and Technology "St. Paul the Apostle"

15:30-15:50h   Apparent performance ratio of photovoltaic systems - a methodology for evaluation of photovoltaic systems across a region
Kristijan Brecl, M. Topič, University of Ljubljana

15:50-16:00h   Photovoltaic systems monitoring solutions,
Kristijan Brecl, M. Topič, University of Ljubljana

16:00-16:30h   Performance and degradation rates of CIS and c-Si photovoltaic systems in tropical climate
Kun Kunaifi, Angele Reinders, Dimas Kaharudin, Muhammad Kirjono, University of Twente

16:30-17:00h   On the search for representative characteristics of PV systems: Data collection and analysis of PV system azimuth, tilt, capacity, yield and shading
Wilfried van Sark, Sven Killinger, David Lingfors, Yves-Marie Saint-Drenan, Panagiotis Moraitis, Jamie Taylor, Nicholas Engerer, Jamie M. Bright

17:00-17:15h   Wrap up, commonalities
Wilfried van Sark, Utrecht University

Wednesday 27 February 2019 (9:30-17:00h)

9:30-15:00h   **WG1 meeting** (Room: C1-FFCUL)

9:30-10:00h   Review of PV performance data and analysis: current status and future developments
Jonathan Leloux, UPM

10:00-10:30h   UAV-Based Autonomous Monitoring System for large-scale Photovoltaics (PV) Plants
Mohammadreza Aghaei, Fraunhofer ISE

10:30-11:00h   Monitoring PV Power Plants with Low Power Wireless Sensor Networks
Pascal Koelblin, Markus Schubert, University of Stuttgart

11:00-11:30h   PV system performance evaluation by clustering production data to normal and non-normal operation.
Odysseas Tsafarakis, Kostas Sinapis, Wilfried van Sark
Together with:
11:00-11:30h   Coffee break

11:30-12:00h   Improving the performances of PV panels using hybrid systems
Daniel T. Cotfas, Transilvania University of Brasov

12:00-12:30h   CPVs and hybrid systems in concentrated light
Petru A. Cotfas, Transilvania University of Brasov

12:30-13:30h   Lunch

13:30-14:00h   Monitoring and performance of an PV EV charging station
Ayda Esfandyari, DIT

14:00-15:00h   Discussion on developing ideas for collaboration and defining Short Term Scientific Missions for WG1
Wilfried van Sark, Utrecht University

15:00-15:30h   Coffee break

15:30-17:00h   **Plenary meeting** (Room: C6.2.56)

Thursday 28 February 2019 (9:00-17:00h)
Excursion
09:00 – 12:00h Visit to CIS PV plant
12:00 – 14:00h Lunch
14:00 – 17:00h Visit to CPV plant

Workshop results

At the end of the workshop we will have collected and discussed ideas for collaboration. One potential outcome is the organization of a review paper on PV performance practice within Europe.