COST Action PEARL PV CA16235

Performance and Reliability of Photovoltaic Systems:
Evaluations of Large-Scale Monitoring Data

P EARL PV

Training School III

Simulation tools and models for the analysis of PV system performance

6 - 9 July 2021

Host: University of Brasov, Romania

Provisional Programme

This is a hybrid on-site/on-line event, depending on the circumstances for each participant. All timings are based on Eastern European Time (Brasov), which is one hour ahead of Brussels time.

Schedule of events

Tuesday 6 July 2021 – Day 1: Modelling Principles

Time	Activity	Lecturer
09:30-10:00	Registration and Opening of the Training School	Nicola Pearsall, University of Northumbria / Bogdan Burduhos, Transilvania University of Brasov
10:00–11:15	Participants introduction – training school participants introduce themselves and their research activities	Chair: Aleksandra Krstic-Furundzic, Univ.Belgrade
11:15-11:45	*Coffee break*	
11:45-12:30	The role of modelling in assessing and monitoring PV system performance	Nicola Pearsall, University of Northumbria
12:30-13:30	*Lunch*	
13:30-14:15	Introduction to energy harvesting and simulation of PV systems	Joao Serra, University of Lisbon
14:30-15:15	Modelling of PV modules and systems	Steve Ransome, Consultant
15:15-15:45	*Coffee break*	
15:45-17:00	Simulation of system performance	Facilitated discussion
17:00-18:00	The PVLIB approach to modelling and analysis	Josh Stein, Sandia National Laboratory (USA)

Wednesday 7 July 2021 – Day 2: Investigating Performance

Time	Activity	Lecturer
09:30-10:30	Irradiance modelling using LightTools, a ray tracing technique	Xitong Zhu, Eindhoven University of Technology
10:30-11:15	Reliability modelling	Jeff Kettle, Glasgow University
11:15-11:45	*Coffee break*	
11:45-12:30	Encoder-decoder image segmentation models for EL images of thin-film modules	Evgenii Sovetkin, FZ-Jülich
12:30-13:30	*Lunch break*	
13:30–14:15	Modelling of degradation	Facilitated discussion
14:15-15:00	Fault detection for PV systems using machine learning techniques	Mohammedreza Aghei, Eindhoven University of Technology
15:00-15:30	*Coffee break*	
15:30-17:00	Field performance and fault detection	Facilitated discussion

Thursday 8 July 2021 – Day 3: Modelling System Concepts

Time	Activity	Lecturer
09:45-10:30	Energy loss modelling	Angele Reinders, University of Twente
10:30-11:15	Modelling of floating PV systems	Sara Golroodbari, University of Utrecht
10:15-11:30	*Coffee Break*	
11:30-13:00	Simulation of the bifacial energy gain for photovoltaic plants using the Graphics Processing Unit (GPU) 1) Introduction to the theoretical concepts 2) Practical simulation exercises using the Lusim tool	Jonathan Leloux, Lucisun Jesus Robledo Bueno, Lucisun
13:00-14:00	*Lunch Break*	
14:00-14:15	Introduction to modelling group challenge	Joao Serra, University of Lisbon
14:15-15:30	Group modelling exercise	
15:30-16:00	*Coffee Break*	
16:00-17:00	Group modelling exercise (continued)	
17:00-17:30	Preparation of group presentations for wrap-up session tomorrow	

Friday 9 July 2021 – Extending modelling to non-technical aspects

Time	Activity	Lecturer
9:30–10:15	Economic aspects of PV system modelling	David Moser, EURAC
10:15-11:00	Environmental impact assessment for PV modules and systems – using environmental models	Nicola Pearsall, University of Northumbria
11:00-11:30	Coffee break	
11:30-12:45	Interactive poster session and reports on modelling challenge	Aleksandra Krstic-Furundzic, Univ.Belgrade / Joao Serra, University of Lisbon
12:45-13:30	Wrap-up and closure of the training school/ joined lunch for on-site participants	Aleksandra Krstic-Furundzic, Univ.Belgrade

Address of the venue:

Transilvania University of Brasov
R&D Institure *High Tech Products for Sustainable Development*
Str. Institutului 10, Brasov 500484

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