

COST Action PEARL PV CA16235

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



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 expected to be a hybrid physical/on-line event, depending on the circumstances relating to the control of Covid-19. On-line participation will be available for those who are unable to travel. Timings are based on Eastern European Time (Brasov).

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	Angele Reinders / UT
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	<i>Coffee break</i>	
11:45-12:30	The role of modelling in assessing and monitoring PV system performance	Nicola Pearsall, University of Northumbria
12:30-13:30	<i>Lunch</i>	
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	<i>Coffee break</i>	
15:45-17:00	Simulation of system performance	Facilitated discussion and exercises
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	<i>Coffee break</i>	
11:45-12:30	Encoder-decoder image segmentation models for EL images of thin-film modules	Evgenii Sovetkin, FZ-Jülich
12:30-13:30	<i>Lunch break</i>	
13:30-14:15	Modelling of degradation (title to be confirmed)	To be advised
14:15-15:00	Fault detection for PV systems using machine learning techniques	Reza Aghei, Eindhoven University of Technology
15:00-15:30	<i>Coffee break</i>	
15:30-17:00	Exercises on field performance and fault detection	Facilitated discussion and exercises

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	<i>Coffee Break</i>	
11:30-13:00	Modelling of complex systems (title to be confirmed)	Jonathan Leloux, Lumisun (to be confirmed)
13:00-14:00	<i>Lunch Break</i>	
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	<i>Coffee Break</i>	
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 Institute *High Tech Products for Sustainable Development*
Str. Institutului 10, Brasov 500484

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