

Workshop program

7th Energy Rating and Module Performance Modeling Workshop (30-31 March 2017, Switzerland)

DAY1

Welcome & introduction (9:10-9:30)

- Welcome [Roman Rudel – SUPSI](#)
- Introduction to this workshop [Joshua Stein – Sandia](#)
- Introduction to IEA PVPS Task 13 activities [Ulrike Jahn – TÜV Rheinland](#)

Session 1: Energy rating (9:30-10:30)

Session chair: [Davide Rivola - SUPSI](#)

- Presentation of the Photoclass project and its follow-up [Stefan Winter – PTB](#) 20 min
- Overview on Energy Rating standard (IEC 61853 part 1-4) [Ralph Gottschalg - CREST](#) 20 min
- EN 50380 ed. 2.0: What is new? What's coming next? [Bengt Jaeckel – UL](#) 20 min

Coffee break

Session 1 (cont.): Energy rating (11:10-12:20)

Session chair: [Ralph Gottschalg - CREST](#)

- Presentation of draft IEC 61853 part 3 [Thomas Huld – JRC](#) 15 min
- New approach for energy yield assessment with linear performance loss analysis (LPLA) [Markus Schweiger – TÜV Rheinland](#) 20 min
- Reference data sets for IEC61853 part 4 [Thomas Huld – JRC](#) 15 min
- Measuring the spectral and angular distribution of the diffuse solar radiance [Stefan Riechelmann – PTB](#) 20 min

POSTER presentations (12:20-12:45)

Lunchbreak

Session 2: PV module modeling (14:00-15:20)

Session chair: [Robert Kenny - JRC](#)

- Overview of photovoltaic module performance modeling approaches [Joshua Stein – Sandia](#) 20 min
- PV module modelling in PVsyst, in view of IEC 61853 [Bruno Wittmer – PVSYSY](#) 20 min
- More accurate module performance predictions using a new model based on IEC-61853 data [Janine Freeman – NREL](#) 20 min
- Modeling of PV module temperature using steady state models: analysis for different climates [Elena Barykina – Uni Oldenburg](#) 20 min

Coffee break

Session 2 (cont.): PV module modeling (15:50-17:10)

Session chair: *Joshua Stein - Sandia*

- Choosing the best empirical model for predicting energy yield *Steve Ransome – SRCL* 20 min
- Propagation of measurement uncertainties into kWh prediction *Christian Reise – ISE* 20 min
- Sensitivity analysis for energy rating: Linearity, T-coefficient and AOI dependence of a reference solar cell *Thomas Fey – PTB* 20 min
- Energy rating and module performance ratio uncertainty *Martin Bliss- CREST* 20 min

Conference Dinner

DAY2

Session 3: Cell and module calibration methods and uncertainties (9:00-10:40)

Session chair: *Stefan Winter - PTB*

- The laser-based differential spectral responsivity facility at PTB: Calibration services for energy rating *Ingo Kröger – PTB* 20 min
- Uncertainty in DSR measurements according to approximations defined in the IEC 60904-8 *Karsten Bothe – ISFH* 20 min
- Accurate indoor data for energy rating *Jochen Hohl Ebinger - ISE* 20 min
- Measurement techniques for energy rating of PV modules at TÜV Rheinland PV Test Laboratory *Werner Herrmann - TÜV Rheinland* 20 min
- Performance of PV modules under different irradiances and temperatures *Robert Kenny - JRC* 20 min

Coffee break

Session 4: Energy prediction of new technologies or features (11:10-12:50)

Session chair: *Francesco Frontini - SUPSI*

- BIPV needs: SUPSI experiences beyond standard test conditions *Pierluigi Bonomo – SUPSI* 20 min
- Simulation-based energy yield analysis of building integrated photovoltaic systems *Johannes Eisenlohr- ISE* 20 min
- Modeling of mismatch losses due to partial shading in PV plants with custom modules *Gianluca Corbellini – SUPSI* 20 min
- Energy yield measurements of MLPE components and comparison with simulation results *Dirk Stellbogen - ZSW* 20 min
- Characterizing and modeling the performance of bifacial photovoltaic modules and systems *Joshua Stein - SANDIA* 20 min

Closing