



# 4<sup>th</sup> PV Performance Modelling and Monitoring Workshop

TÜV Rheinland Group  
Cologne, Germany  
22<sup>nd</sup> and 23<sup>rd</sup> October, 2015

## Introduction

TÜV Rheinland, Sandia National Laboratories, and the IEA PVPS Task 13 are co-organizing the 4<sup>th</sup> PV Performance Modelling Collaborative (PVP MC) Workshop to be held at TÜV Rheinland headquarters in Cologne, Germany (22-23 October 2015). This workshop brings together solar PV professionals and researchers to learn about and discuss new and important technical issues related to PV performance modelling. This workshop will be stimulating, interactive, and provide valuable information for modellers, model developers, and other users of PV performance model results.

## Session 1. Solar Resource Data and Uncertainty

- Satellite irradiance models and data sets
- Available irradiance and weather data sets and PV online assessment tools
- Review of modelled solar resource uncertainty
- Reducing solar resource errors

## Session 2. Soiling Predictions and Effects on Module and Array Performance

- Soiling impact on energy predictions
- Effects of cleaning robots and concepts to reduce energy yield losses
- New PV technologies for reducing the effects of soiling
- Validation of predictive soiling models

### Session 3. Spectral Corrections for PV Performance Modelling

- Available measured spectral data for PV performance modelling
- Spectral effects for different PV Cell technologies and different climatic zones
- Proposed metrics for describing spectral effects (e.g., air mass, average photon energy, blue-to-red ratio, spectral mismatch factor)
- Methods for estimating these metrics from readily available data

### Session 4. Bifacial PV Array Performance Modelling

- Overview of the bifacial market potential
- Technical aspects of the bifacial performance advantages
- Modelling efforts to predict bifacial PV array and system performance

### Session 5. PV Modelling Applications: Modelling Tool Updates

- Developers of PV performance software applications will present overviews and technical updates of their models.

### Session 6. Field Monitoring and Validation of PV Performance Model

- PV model validation using monitored performance and other field data in different climates
- Results of a blind PV modelling exercise
- Comparison of accuracies of different PV performance model predictions for a monitored system
- Benchmarking the state of the art for PV performance modelling

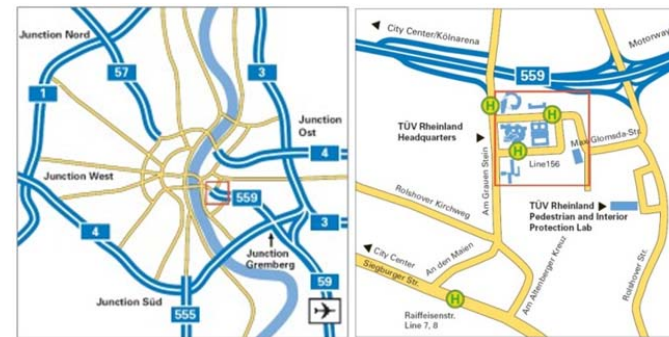
### Registration

If you would like to attend the workshop, please register here:  
[www.tuv.com/solarenergy](http://www.tuv.com/solarenergy)

Participation fee: 300 EUR incl. VAT

### How to arrive

TÜV Rheinland Group  
Rheinlandsaal, Am Grauen Stein, 51105, Cologne, Germany



### Organisation

TÜV Rheinland Energie und Umwelt GmbH

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