Mediterranean Green Energy Forum

Invited Sessions

Invited Session Proposal for the second Mediterranean Green Energy Forum (MGEF 2015), to be held in Marrakech 26-28 March 2015

http://nkms.free.fr/MGEF/MGEF2015.htm

MONITORING AND DIAGNOSIS FOR PV SYSTEMS

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The technological fast evolution of renewable energy sources (SRE), especially no programmable sources (solar and wind) during the last two decades has determined the installation of a huge number of such systems in the world. The main disadvantage of photovoltaic systems (PVSs) is the still high capital costs, as tough they are decreasing very rapidly. Of course an optimal design of a PV installation can keep low the initial cost of produced kilowatt-hour, but then, it is crucial to continuously monitor and control its performances. In fact, electrical faults and aging of PV modules cause a reduction of both efficiency and production.

The faults in PV plants do not only affect performance and productivity, but also may lead to critical and detrimental situations. In fact, without proper fault detections, the presence of faults in PV arrays can cause lack of safety and a probable fire hazard for the whole system. Having considered these problems, it is of paramount importance to check PVSs status (normal or abnormal condition).

To be useful, a monitoring report must provide information on relevant aspects of the operation in terms that can be easily understood by a third party. Appropriate performance parameters must be chosen, and their values constantly updated.

The main purposes of this session concern the development of tools and methods in diagnosis and monitoring for PV systems. This special session aims to focus on the recent research and trends for the development and application of new models and methods for monitoring and evaluating photovoltaic systems as a key of the deployment of large scale PV systems around the word.

Aims and Scopes (include but not limited to):
1- Models of PV systems for on-line applications;
2- PV system measurements for characterization and identification;
3- Diagnosis methods for PV arrays and systems;
4- Reliability and testing methods for PV modules;
5- Numerical models for PV power production forecast;