

Innovative Approach for a Reliable Mapping of the Morocco's Solar Resource

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Key words: Cartography; Engineering survey; Geoinformation/GI; Remote sensing; Spatial planning; Young surveyor; GIS, mapping, renewable energy

SUMMARY

The current national energy policy aims to develop and promote renewable and clean energy. To this end, one of the Morocco's most available energies that could contribute appreciably to improving national energy mix is solar energy. Thus; any solar project must rely (at least in large part) on modeled (satellite-based) irradiance data. However, a key question remains: the reliability of these data sets and generated maps. It is in this outlook that our study comes to highlight the problems with the assessment of the solar resource and to stress the concept of the calibration of satellite data to ground measurements (site-specific adaptation). In order to achieve this desired goal, we have introduced the different procedures of local calibration used in the solar energy industry and operated the calibration of the Moroccan Solar Atlas (MSA). In this context, an innovative protocol of generalization of the calibration to cover the entire territory of Morocco has been implemented and has demonstrated the quality of the proposed method and its contribution compared to conventional methods.

Keywords: solar radiation, GHI (Global Horizontal Irradiance), DNI (Direct Normal Irradiance), satellite-based database, ground measurements, calibration, solar atlas, method

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