



## **A preliminary assessment of the quality of UV data derived from the database HelioClim-3**

L. Wald (1), A. Arola (2), C. Brogniez (3), and J. M. Vilaplana (4)

(1) MINES ParisTech, Sophia Antipolis cedex, France (lucien.wald@mines-paristech.fr), (2) Kuopio Unit, Finnish Meteorological Institute, Kuopio, Finland, (3) Laboratoire d'Optique Atmosphérique, Université Lille 1 des Sciences et Technologies, Villeneuve d'Ascq, France, (4) Earth Observation, Remote Sensing and Atmosphere Department, INTA / El Arenosillo, Mazagon, Spain

The database HelioClim-3 contains 15-min values of surface downward solar irradiance for Europe, Africa and Atlantic Ocean. These values result from an appropriate real-time processing of Meteosat data, which started in 2004. The database HelioClim-3 is widely used by the scientific community as well as companies working in the solar energy field. Its performances have been assessed in several occasions and have been published.

Interest in spectral distribution of solar irradiance is increasing for various reasons, e.g., photovoltaic systems, biomass production, glazing material, and so on. An algorithm was proposed by the Belgian Royal Institute of Meteorology in the European Solar Radiation Atlas (2000) to derive spectral distribution every 10 nm from observations of total irradiance. It makes use of the sunshine duration and we adapt it to the total irradiance by the means of the Angstrom relationship. This revised version can then be applied to the HelioClim-3 total irradiances to obtain time-series of spectral distribution of irradiance for any pixel in the field-of-view of Meteosat.

The communication presents this algorithm and investigates the quality of such spectral data. For the time being, it focuses on the UV-A, UV-B and erythemal bands. This assessment is made by comparison with ground measurements considered as reference. Several time-scales are considered: hour, day, and month. Two years of data: 2005 and 2006, are used. Hence, consistency with time in quality results is investigated. Two ground stations are used: Lille (North France) and El Arenosillo (South Spain), to study effects of different atmospheric and climate conditions on satellite-based surface UV irradiance. Quality is assessed for various types of skies: clear, overcast, and intermediate.

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