

Optical calibration facility at the Izaña Atmospheric Research Center

C. Guirado [1] [2], R. Ramos [2], Á. de Frutos [1], A. Berjón [3] [1], A. Redondas [2],
C. López [4], V. Cachorro [1], E. Cuevas [2], R. González [1], S. González [1], M.
Hernández [4]

[1] Atmospheric Optics Group, Valladolid University (GOA-UVA), Spain

[2] Izaña Atmospheric Research Center, Meteorological State Agency of Spain
(AEMET), Spain

[3] Laboratoire d'Optique Atmosphérique, Université Lille, France

[4] Sieltec Canarias SL, Spain

During the last years a new optical calibration facility have been developed and deployed at the Izaña Observatory for the calibration and characterization of radiation instrumentation within research activities. The new systems are the result of a joint effort of the Izaña Atmospheric Research Center (AEMET) and the Atmospheric Optics Group of Valladolid University (GOA-UVA). The high altitude Izaña Atmospheric Observatory is involved in several national and international atmospheric and environmental research networks and programs (i.e. GAW, BSRN, AERONET, NDACC, RBCC-E) in which is crucial a robust and traceable Quality Assurance & Quality Control system for the different broad band radiometers, photometers and spectrometers, which measure, among other ones, spectral solar radiation, aerosol optical depth and total ozone amount. This new facility allows the absolut, spectral and cosine response calibration of the above mentioned instrumentation in an isolated dark room where several set-ups are available for each kind of response characterization. At this time there are six set-ups running at the laboratory: one for the radiance calibration, one for the calculation of the angular response, one for the spectral response characterizarion, one for the slit function determination and two (vertical and horizontal oriented ones) for the irradiance calibration. The different set ups account for the different specific requirements of each sensor to be calibrated depending on its physical features as shape, size and weight. The systems have been built in a modular way, and the control and acquisition software have been developed such way the calibration facility could be easily adapted and meet the specific requirements of each program. The systems, as well as some examples of calibrations, are shown in this presentation.