The Izaña Atmospheric Observatory (IZA) is part of the Global Atmospheric Watch (GAW) programme and is managed by the Izaña Atmospheric Research Center (IARC) belonging to the Meteorological State Agency of Spain (AEMET). It is located in the Tenerife Island (The Canary Islands; 28°14’ N, 16°29’ W, 2,367 m a.s.l.) above a quasi-permanent inversion layer with excellent conditions for in situ and column measurements of trace gases and aerosols under “free troposphere” conditions. The environmental conditions (stable total column ozone, very low precipitable water vapour and low aerosols content) and the high frequency of clean and pristine skies make IZA an optimal site for calibration and validation activities. In fact, IZA is a WMO-GIMO Testbed for Aerosols and Water Vapor Remote Sensing Instruments and the WMO Regional Brewer Calibration Center for Europe (RBC-E). The radiation site in Izaña is part of BSRN since March 2009. (http://www.bsrn.aemet.es)

**QUALITY CONTROL AND CALIBRATIONS**

As part of the radiation quality assurance system a calibration campaign of BSRN pyranometers and pyrheliometer was performed during 2014 using as reference an Absolute Cavity Pyrheliometer PM06 (see Figure 3), calibrated in the World Radiation Center (Davos) and following the ISO 9009:1990 (E) and ISO 9846-1993(E). This calibration will be performed every 12 months from now on and compared with routine calibrations performed with LibRadtran model (see Figure 4) described in García et al. (2014a).

**MODEL COMPARISONS**

![Figure 4. Scatterplot of modelled versus measured (PM06) direct radiation (Wm⁻²) at BSRN Izaña on 6th and 9th June 2014. The least-square fit parameters and the root mean square error (RMSE) are shown in the legend.](image)

**BSRN DATA SERIE AT IZA**

![Figure 5. Daily values (Mm⁻²) of (a) global, (b) direct, (c) diffuse, (d) UVB, (e) UVA radiation, and (f) atmospheric transmission of direct solar radiation between January 2009 and July 2014 at IZA BSRN.](image)

**RSN DATA SERIE AT IZA**

![Figure 6. Diagrams showing the relationship between daily AOD at 550 nm for global (black squares) and diffuse (red dots) radiation and the CM data.](image)

**1. Aerosol Optical Depth reconstruction from neural network modeling using global radiation, relative humidity, temperature, and FCS between 1933 and 2013 at IZA.**

**2. One-year comparison of different old and new radiation (bimetallic pyranometer, CM-5, CM-11, CM-21) and sunshine (Campbell-Stokes, Sensor)... and derived from Direct radiation) instruments (see Figure 8).**

**3. Radiative forcing and efficiency of desert dust coated with anthropogenic and natural pollutants (SO₄⁺, NO₃⁻, NH₄⁺,...)**


**5. Precipitable water vapor (PWV) obtained from relative humidity using a neural network, and validation/comparison against PWV from FTIR, GPS, radiosonde and CIME, NCEP (1948-2014) and ECMWF ERA Interim reanalysis (1979-2014).**

**REFERENCES**


**RECENT RESULTS**

Solar irradiance measurements compared to simulations at the BSRN Izaña station. Mineral dust radiative forcing and efficiency study (Garcia et al., 2014a)

**ONGOING AND NEXT RESEARCH**

Figure 8. Bimetallic pyranometer and Campbell-Stokes installed at IZA.

1. Aerosol Optical Depth reconstruction from neural network modeling using global radiation, relative humidity, temperature, and FCS between 1933 and 2013 at IZA.

2. One-year comparison of different old and new radiation (bimetallic pyranometer, CM-5, CM-11, CM-21) and sunshine (Campbell-Stokes, Sensor... and derived from Direct radiation) instruments (see Figure 8).

3. Radiative forcing and efficiency of desert dust coated with anthropogenic and natural pollutants (SO₄⁺, NO₃⁻, NH₄⁺,...)


5. Precipitable water vapor (PWV) obtained from relative humidity using a neural network, and validation/comparison against PWV from FTIR, GPS, radiosonde and CIME, NCEP (1948-2014) and ECMWF ERA Interim reanalysis (1979-2014).