Earth Syst. Sci. Data Discuss.,
doi:10.5194/essd-2016-2-RC3, 2016

Open Access Earth System Science Data Discussions

Interactive comment on "Surface Radiation during the Total Solar Eclipse over Ny-Ålesund, Svalbard, on 20 March 2015" *by* M. Maturilli and C. Ritter

Anonymous Referee #3

Received and published: 29 February 2016

Since many years staff members of Alfred Wegner Institute, Helmholtz Centre for Polar and Marine Research Potsdam, together with others continuously have been gathered a set of meteorological data, including radiation and aerological data, at the high Arctic site Ny-Alesund. Maturilli and Ritter used the opportunity of the total solar eclipse, a rare event especially together with the conditions of a cloudless sky in the Arctic, to publish the special data set "Surface Radiation during the Total Solar Eclipse over Ny-Ålesund, Svalbard, on 20 March 2015" in this journal. In addition to the routinely measured data of standard meteorology (air temperature, humidity, pressure), the standard BSRN data as well as the GRUAN aerological data, they present the complete radiation balance components, wind (direction and velocity), cloud base height and three special radiosonde launches before, during, and after the eclipse. All data are in a high resolution time of 1 minute, which is standard for BSRN stations.

Printer-friendly version

Discussion paper

So, first time the community get a unique and complete set of radiation and auxiliary data of high quality during a total solar eclipse under cloudless conditions from an Arctic (!) station. It is underlined, that especially, the three additional radiosonde ascents give information, which normally is not available but that is important for further analyses. High quality means in this relation, measurements at the-state-of-the-art (BSRN, GRUAN certified) which is of invaluable worth for further scientific investigations.

The paper is short and precise and gives a good overview about the measurements (including instruments), the meteorological situation and the site necessary for understanding the data.

The referee misses the line of the long wave downward radiation. It is proposed to add it in Figure 5 (upper panel) to complete the picture, even if it seems to be unspectacular. Furthermore, Figures 1 and 4 should be combined as already referee 1 suggested.

Interactive comment on Earth Syst. Sci. Data Discuss., doi:10.5194/essd-2016-2, 2016.

Printer-friendly version

Discussion paper