

Interactive comment on “Assessment of Sun photometer Langley calibration at the high-elevation sites Mauna Loa and Izaña” by Carlos Toledano et al.

Anonymous Referee #1

Received and published: 8 June 2018

The paper is a very useful document describing and characterizing the most important calibration sites for photometers, Izaña and Mauna Loa. It is really well written, simple and schematic, and provides all the necessary information for scientists involved in photometer science. Therefore I consider it suitable for the publication.

Below few minor revisions to be done: 1. page 4, lines 17-19: it is stated that "Possible instrument fluctuations due to shipping are controlled by using always a couple of masters that travel together and rigorous comparison of master instruments at the inter-calibration sites". This is a good solution for the stability of the master instruments. However the other equipments shipped with a round trip for calibrating against

C1

the master can suffer of the same problem, and come back operative with a calibration no more perfect as the one done in the calibration site. Has this point never been checked or studied ?

2. page 5 lines 12-15, add that the CAELIS software will be better described in section 4.1

3. Page 8 line 5: in the text it is stated that the error bar is the year-to-year variability, but in the caption of Figure 3 it is stated that the monthly mean is. Please clarify.

4. section 4.2, Figure 4 : It would be interesting to highlight if the yearly variability has a sort of seasonal dependence. In this case it could depend on internal temperature, not well kept constant, or in the parametrization assumed in the Lambert-Beer Law. Which correction are assumed for gases absorption? it would be interesting they are described briefly in the text.

5. Caption Figure 1: fulfilled

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-430>, 2018.

C2