

Interactive comment on “Improving Langley calibrations by reducing diurnal variations of aerosol Ångström parameters” by A. Kreuter et al.

Anonymous Referee #2

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Improving Langley Calibrations by Reducing Diurnal Variations of Aerosol Angstrom Parameters reports on a method of reducing Langley calibration errors by relying on stable Angstrom exponent instead of stable aerosol optical depth. The method is interesting and novel. I have some questions and comments that should be addressed prior to publication. The paper uses the calibration provided by the Sun photometer manufacturer (PMOD) as a metric for which to compare the calibration obtained with the technique described in this paper. It is not clear how this calibration was created. Is it from a standard Langley calibration or from a lamp calibration? If it is from a standard Langley calibration why should it be any better than the calibration derived with the technique described here? It seems there might be some circularity in the analysis. Ultimately, a reference is required to evaluate the robustness of the technique

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described in this paper. The quality of the reference calibration should be addressed.

6480 lines 18-19 One of the main difficulties with filter radiometers is maintaining the calibration because of changes in the filter transmission.

6482 lines 22-24 Only two of the wavelengths are within 10 nm of the AERONET wavelengths. These two instruments, at least in terms of wavelength sampling, are not especially similar.

6483 lines 18-19 The citing of King et al 1978 is incorrect. This is not an accurate description of what was done in that work.

6483 line 24 “in allusion to” not “in allusion of”

6483 lines 26-29 This paragraph is poorly written and difficult to understand, please reword to clarify.

6487 lines 25-26 Why do you believe that type and size is more likely to remain constant at a site like Innsbruck? Is it dominated by a single aerosol source? It would seem that any location dominated by a single source of aerosol (i.e. type and size) would be amenable to the technique presented in this paper.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 6479, 2012.