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Supplement of

Assessment of Sun photometer Langley calibration at the high-elevation sites Mauna Loa and Izaña

Carlos Toledano et al.

Correspondence to: Carlos Toledano (toledano@goa.uva.es)

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This supplement contains the climatology tables of aerosol optical depth (AOD, at 500nm wavelength), Ångström exponent derived in the spectral range 440-870nm (AE), and precipitable water vapor content (PWV, in cm). These data are derived from the AERONET measurements at the high elevation sites Mauna Loa and Izaña. The period used for Mauna Loa spans 1994-2016, whereas for Izaña the data cover the period 2004-2016.

5 The AOD data are used in Fig. 1a of the paper. The Ångström exponent and precipitable water vapor are supplementary information that illustrates the characteristics at the sites under all atmospheric conditions, including dust events at Izaña in summer. Please refer to Figures 1b and 2 of the paper and the corresponding text for specific information about AOD characteristics during Langley favorable conditions.

Table S1. Aerosol optical depth (500nm), Ångström exponent and Precipitable Water Vapor climatology for Mauna Loa and Izaña based on AERONET data.

(a) Mauna Loa (1994-2016)					
	AOD(500nm)	AE(440-870)	PWV(cm)	N Days	N Months
Jan	0.012± 0.007	1.24± 0.33	0.21± 0.13	511	20
Feb	0.014± 0.010	1.23± 0.35	0.22± 0.15	447	20
Mar	0.024± 0.016	1.25± 0.31	0.22± 0.13	497	22
Apr	0.028± 0.015	1.16± 0.30	0.23± 0.13	536	21
May	0.024± 0.014	1.04± 0.26	0.27± 0.13	555	21
Jun	0.017± 0.008	1.10± 0.29	0.28± 0.12	569	22
Jul	0.014± 0.008	1.21± 0.31	0.28± 0.14	502	21
Aug	0.011± 0.006	1.29± 0.34	0.30± 0.16	519	21
Sep	0.011± 0.007	1.35± 0.39	0.29± 0.17	531	22
Oct	0.012± 0.007	1.41± 0.38	0.31± 0.17	522	22
Nov	0.012± 0.009	1.35± 0.39	0.29± 0.18	479	22
Dec	0.012± 0.008	1.34± 0.35	0.24± 0.16	446	20
Total	0.016± 0.006	1.25± 0.11	0.26± 0.03	6114	254
(b) Izaña (2004-2016)					
	AOD(500nm)	AE(440-870)	PWV(cm)	N Days	N Months
Jan	0.028± 0.073	1.13± 0.33	0.26± 0.14	263	12
Feb	0.019± 0.024	1.19± 0.44	0.22± 0.13	210	12
Mar	0.043± 0.068	1.06± 0.45	0.26± 0.15	284	12
Apr	0.043± 0.066	1.15± 0.40	0.29± 0.16	303	12
May	0.044± 0.062	1.05± 0.35	0.35± 0.19	342	12
Jun	0.062± 0.105	0.99± 0.46	0.39± 0.19	369	14
Jul	0.136± 0.148	0.62± 0.53	0.49± 0.26	422	14
Aug	0.128± 0.123	0.54± 0.48	0.64± 0.33	384	13
Sep	0.058± 0.082	0.88± 0.48	0.59± 0.29	344	13
Oct	0.032± 0.048	1.00± 0.39	0.49± 0.26	330	13
Nov	0.027± 0.038	1.06± 0.38	0.41± 0.24	257	13
Dec	0.022± 0.028	1.20± 0.35	0.26± 0.17	245	12
Total	0.053± 0.039	0.99± 0.21	0.39± 0.14	3753	152