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Supplement of

HSRL-2 aerosol optical measurements and microphysical retrievals vs. airborne in situ measurements during DISCOVER-AQ 2013: an intercomparison study

Patricia Sawamura et al.

Correspondence to: Patricia Sawamura (patricia.sawamura@nasa.gov)

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Table S1. Sign table used in the HSRI-2 retrieval algorithm to disturb the input data (i.e. $3\beta + 2\alpha$) with their respective uncertainties. For instance, the first run of the inversion algorithm starts with an input set comprised of $\alpha_{355} + \Delta\alpha_{355}$, $\alpha_{532} + \Delta\alpha_{532}$, $\beta_{355} + \Delta\beta_{355}$, $\beta_{532} + \Delta\beta_{532}$, $\beta_{1064} - \Delta\beta_{1064}$, where Δ s refer to uncertainties.

Run number	α_{355}	α_{532}	β_{355}	β_{532}	β_{1064}
1	+	+	+	+	-
2	-	-	+	+	-
3	+	-	+	+	-
4	-	+	+	+	-
5	+	+	-	-	+
6	-	-	-	-	+
7	+	-	-	-	+
8	-	+	-	-	+

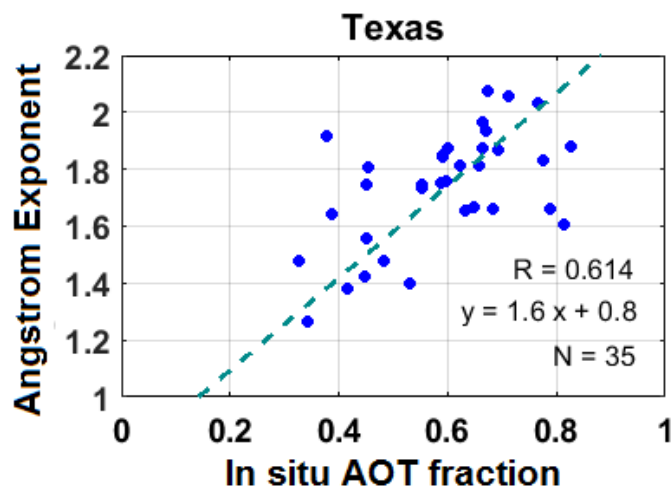


Figure S1. In situ AOT fraction calculated as the ratio between in situ and AERONET AOT measurements vs. AERONET Ångström exponent calculated from AOT measurements at 440 nm and 870 nm.

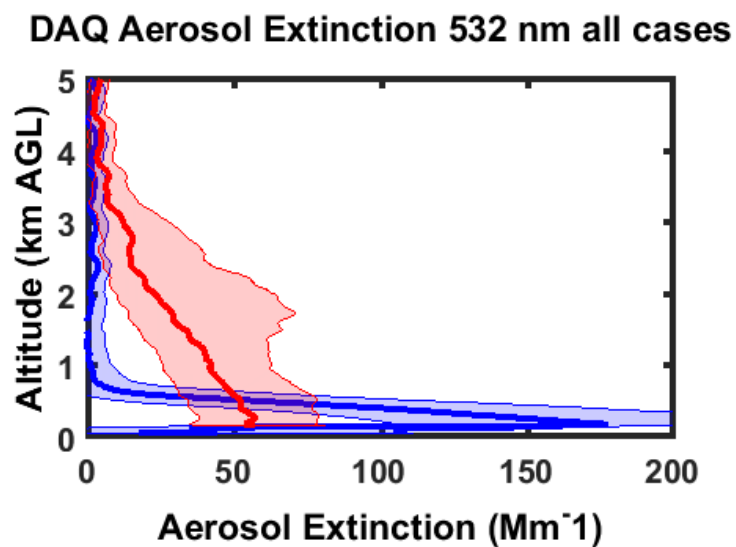


Figure S2. Median extinction profiles measured with HSRL-2 at 532 nm during DAQ in California (Blue) and Texas (Red). Shaded areas represent the 25th and 75th percentiles.