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Supplement of

Aerosol scattering effects on water vapor retrievals over the Los Angeles Basin

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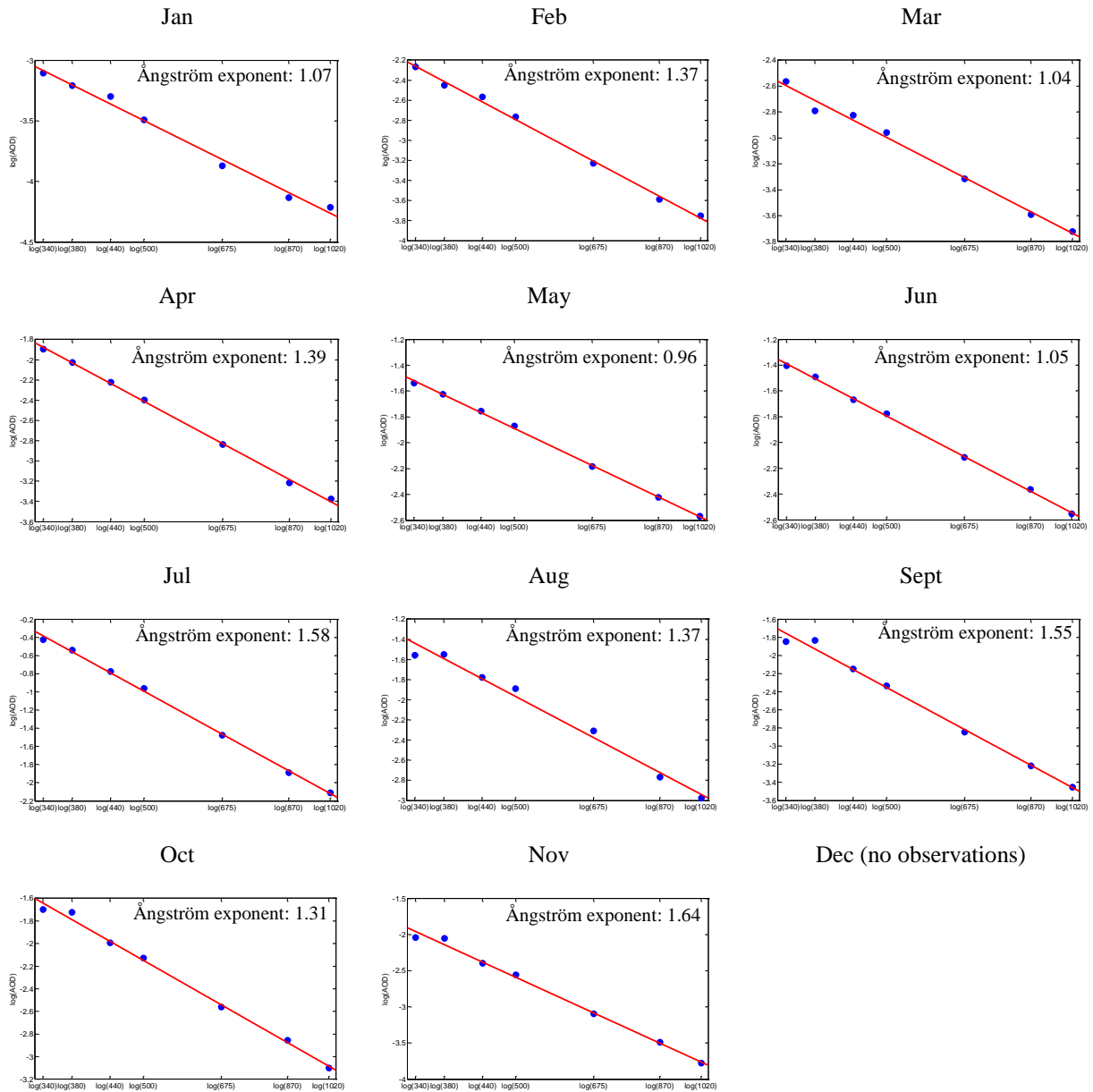
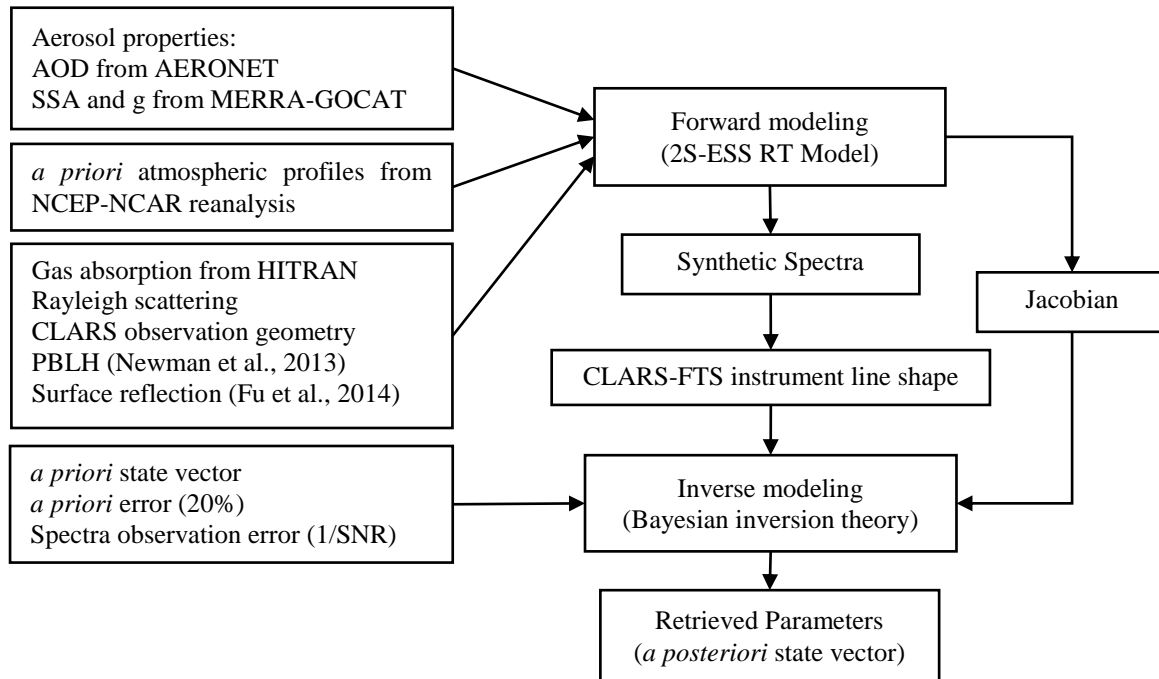


Figure S1. Examples from applying linear regression, using the logarithmic form of Ångström exponent law, on the AERONET AOD data at noon time around 13:00, for the 11 different months, selected from the 68 days of data shown in Figure 4 and 7. The blue dots are the AERONET AOD measurements in the seven different bands (340 nm, 380 nm, 440 nm, 500 nm, 675 nm and 1020 nm) and the red line is the linear regression result. Ångström exponents are also indicated. Please note that both the x- and y-axis is in logarithmic scale.



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Figure S2. Schematic diagram of the retrieval algorithm based on the 2S-ESS RT model and Bayesian inversion theory. A detailed description is provided in Section 5.

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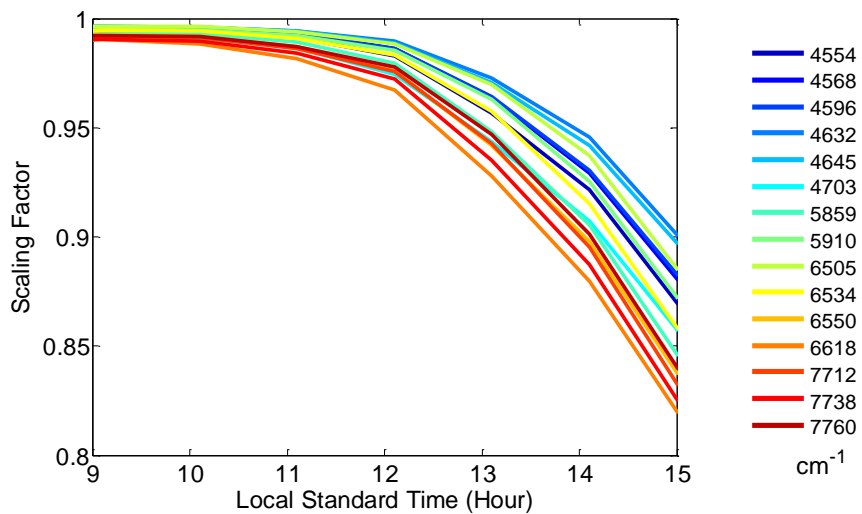


Figure S3. Scaling factors for H₂O SCDs retrieved from the simulated synthetic spectral radiance in the 15 chosen bands using 2S-ESS RT model with AOD data from AERONET-Caltech on March 01, 2013. This plot is the same as Figure 6(a), except that the mean is not subtracted.

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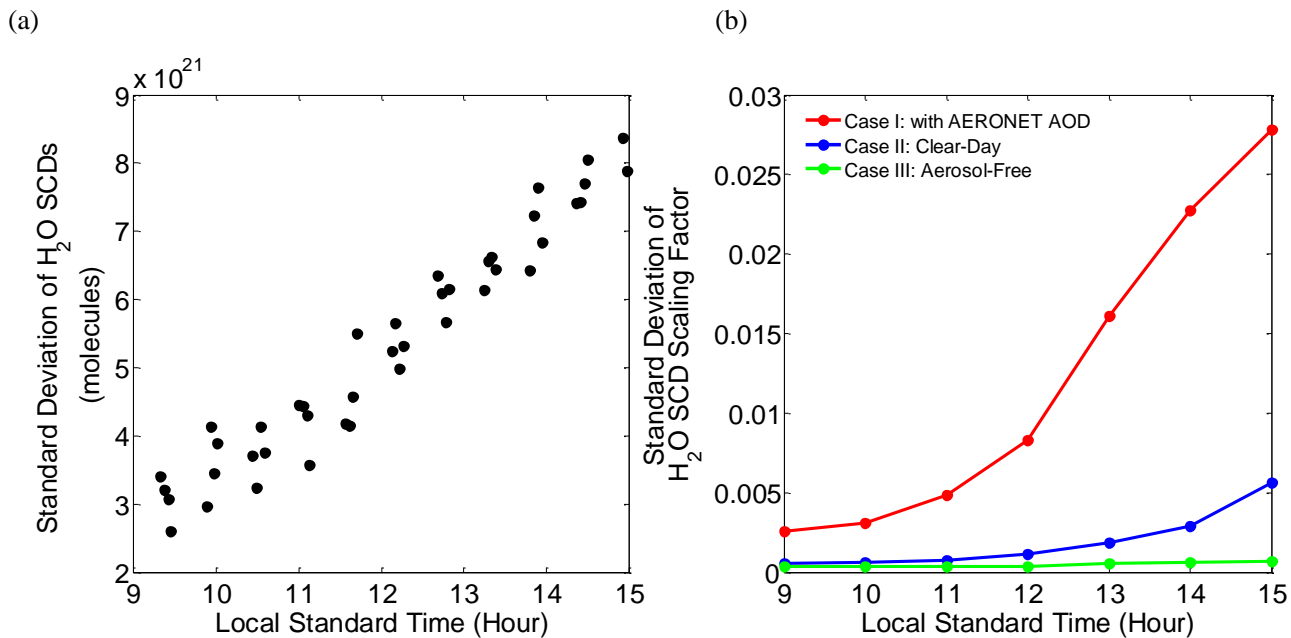


Figure S4. Standard deviation of H₂O (a) SCDs observed by CLARS (unit: molecules), and (b) SCD scaling factors simulated by the 2S-ESS RT model. The three cases in (b) are the same as those in Figure (6).