



Supplement of

Investigating the assimilation of CALIPSO global aerosol vertical observations using a four-dimensional ensemble Kalman filter

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Supplement



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Figure S1. Spatial distributions of the monthly mean AOTs at 550 nm in the FR experiment (sampled to the MODIS Aqua observations) and the mean differences of the AOTs in the 4D-LETKF-24H-NRL experiment minus those in the FR experiment for each individual aerosol component (i.e., dust, sulfate, sea salt, organic carbon [OC], and black carbon [BC]) during November 2016.



Figure S2. Spatial distributions of the monthly mean AOTs at 550 nm in the FR experiment (sampled to the NRL MODIS observations) and the mean differences of the AOTs in the LETKF-CALIPSO, 4D-LETKF-24H-CALIPSO, 4D-LETKF-24H-NRL, and 4D-LETKF-24H-CALIPSO-

5 NRL experiments minus those in the FR experiment for each individual aerosol component (i.e., dust, sulfate, sea salt, organic carbon [OC], and black carbon [BC]) during November 2016.



Figure S3. Total number of available CALIOP hourly aerosol extinction coefficients during November 2016 tthroughout the day, in the night-time, and in the day-time.