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Supplement of

The diurnal cycle of the smoky marine boundary layer observed during August in the remote southeast Atlantic

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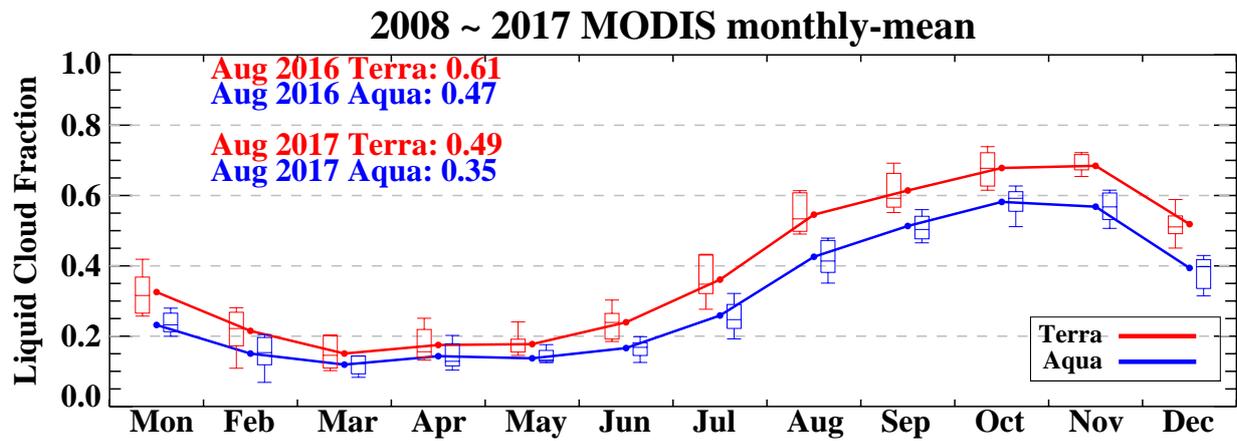


Figure S1. Annual cycle of MODIS-derived monthly-mean liquid cloud fractions averaged over a 4° by 4° box slightly to the east of Ascension (6°-10°S, 11°W-15°W) from 10 years of data (2008 – 2017). Median, 10th, 25th, 75th and 90th distribution values are indicated for each month, and mean values are shown using filled circles connected with lines. Red and blue colors represent the Terra and Aqua satellites respectively.

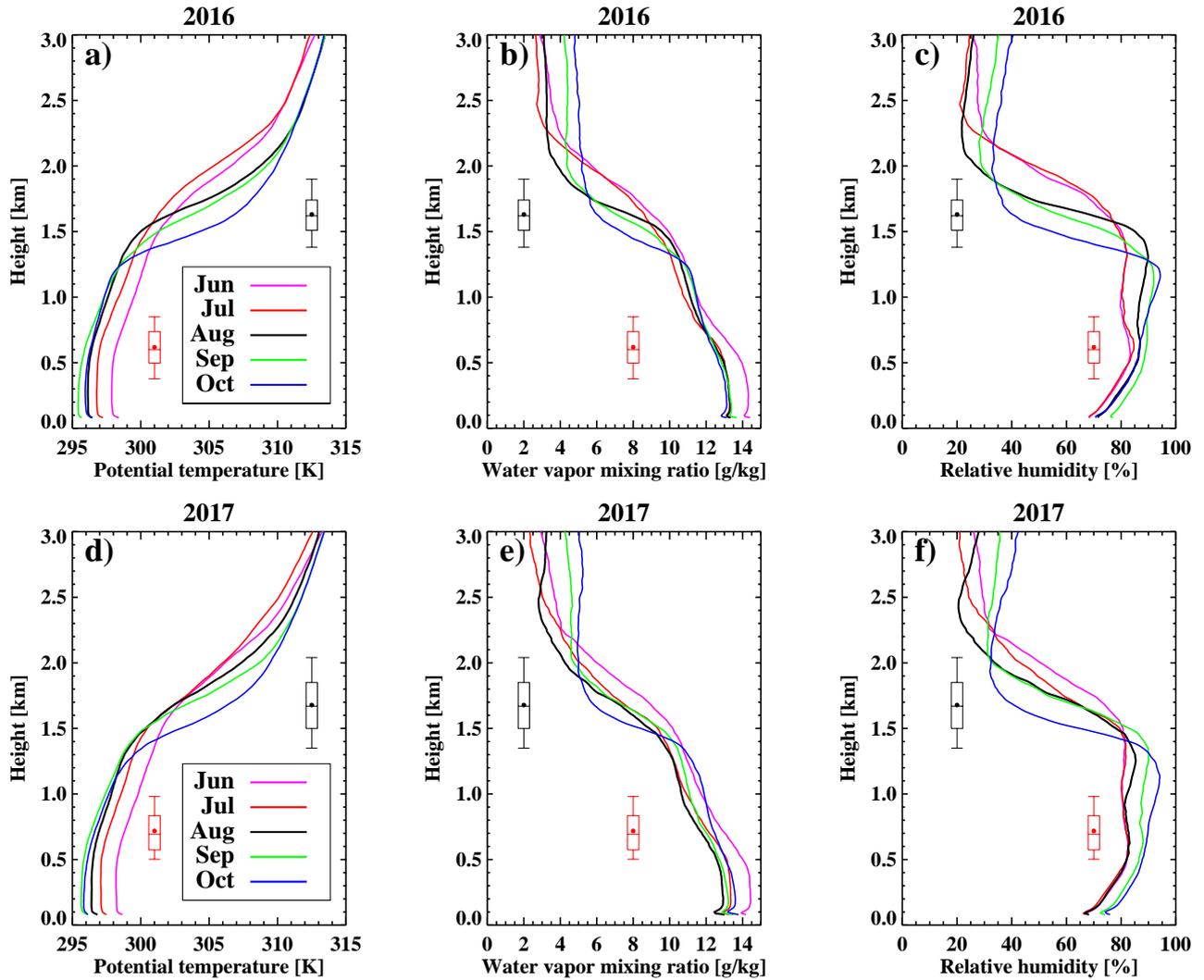


Figure S2. Radiosonde-derived vertical profiles of the monthly-mean potential temperature, water vapor mixing ratio and relative humidity profiles for June-October, 2016 (a, b, and c) and June-October 2017 (d, e, and f). The median, 10th, 25th, 75th and 90th percentile values of the August cloud top inversion base and lifting condensation level are indicated in black and red respectively, on all panels, with filled circles indicating the mean.

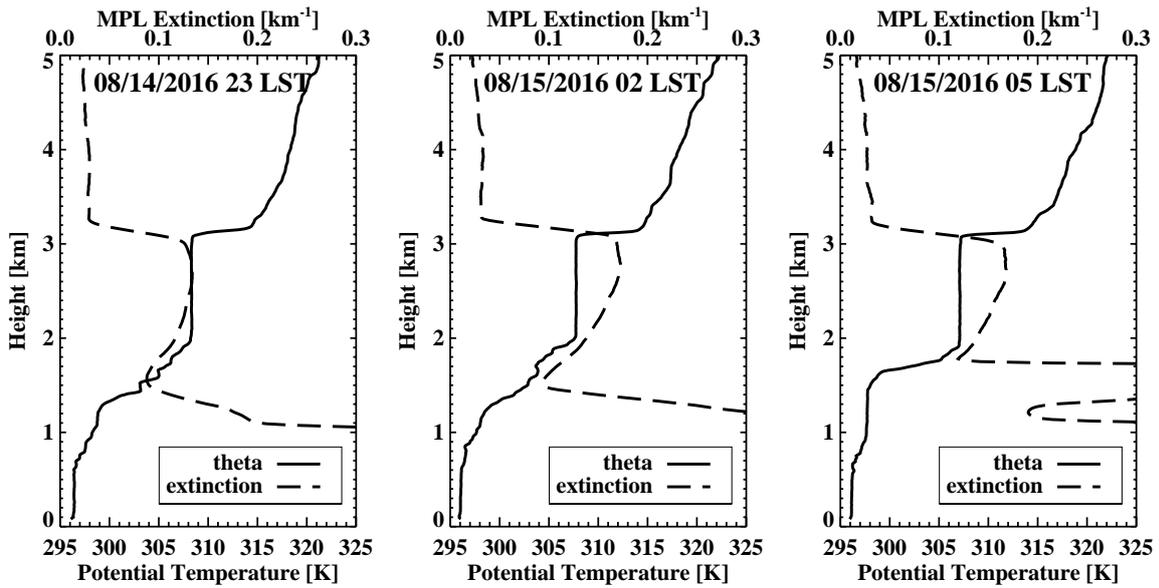


Figure S3. Potential temperature (solid, from radiosonde) and volume extinction coefficient (dashed, derived from micropulse lidar following Delgado et al. (2018) sometime within the one hour centered on the radiosonde launch time) profiles for a) August 14, 2016, 23 LST, b) August 15, 2016, 2 LST, and c) August 15, 2016, 5 LST.

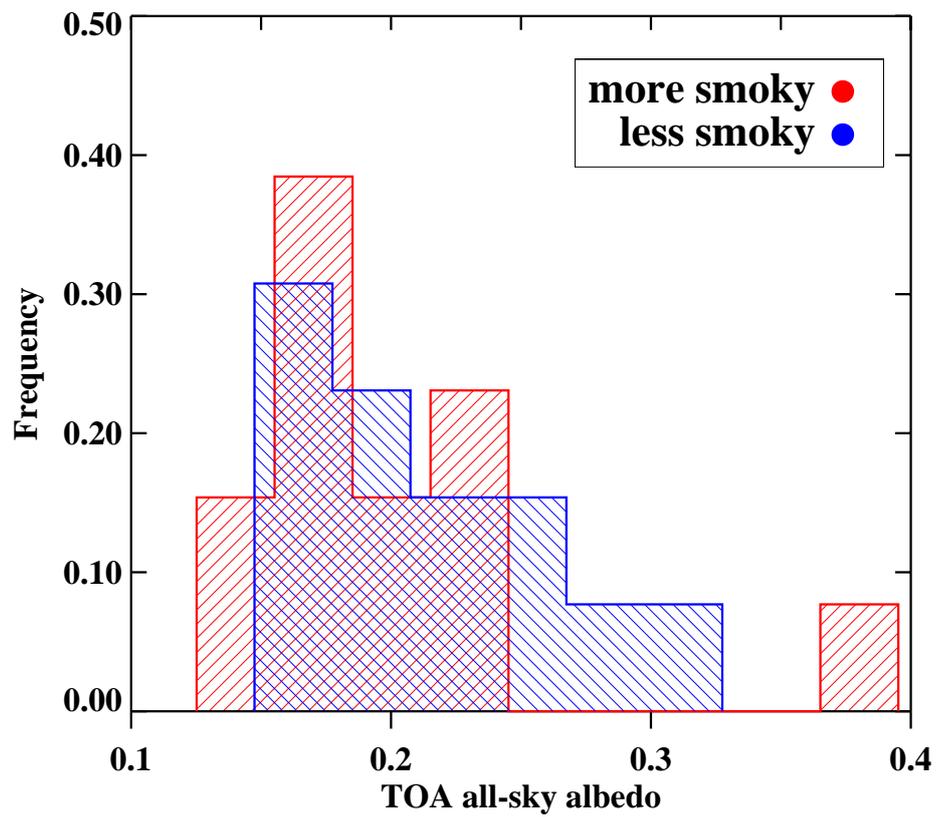


Figure S4. Frequency distribution of the CERES areal-mean all-sky top-of-atmosphere albedo for “more” (red) and “less” (blue) smoky days.