



Supplement of

Global 3-D distribution of aerosol composition by synergistic use of CALIOP and MODIS observations

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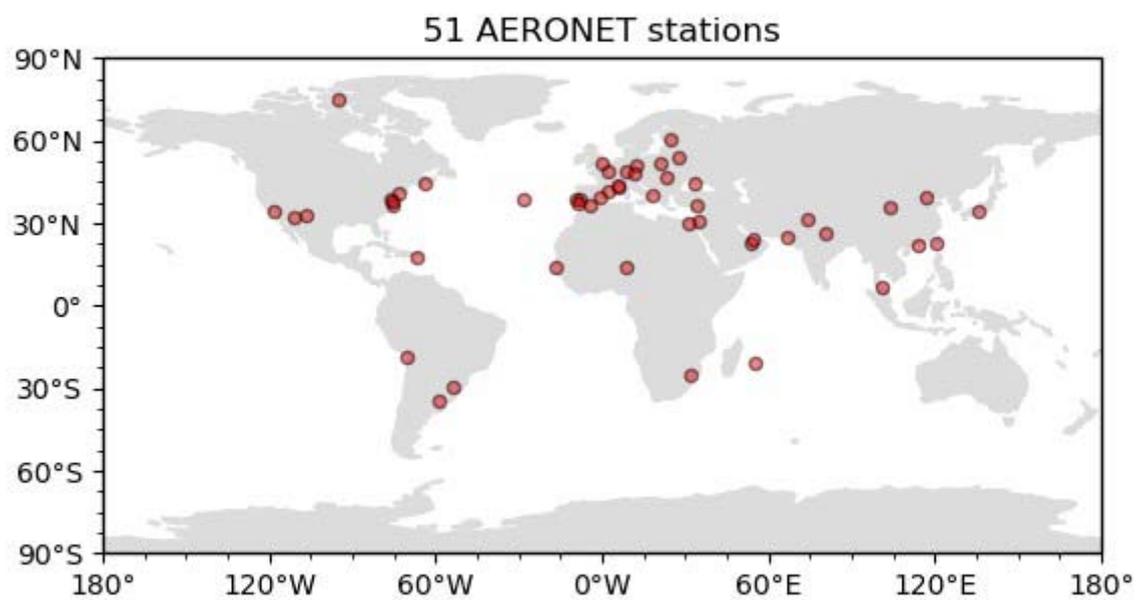
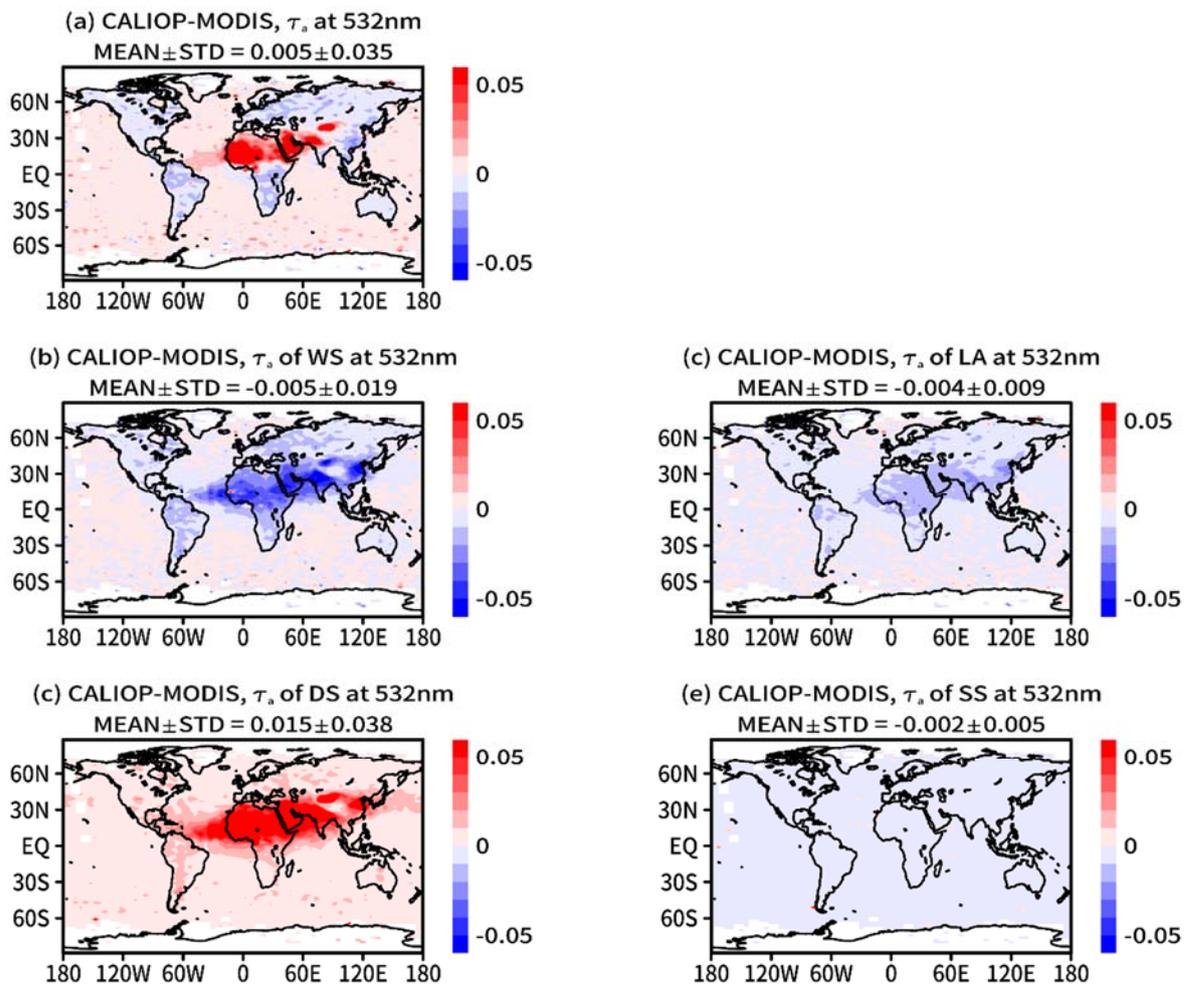
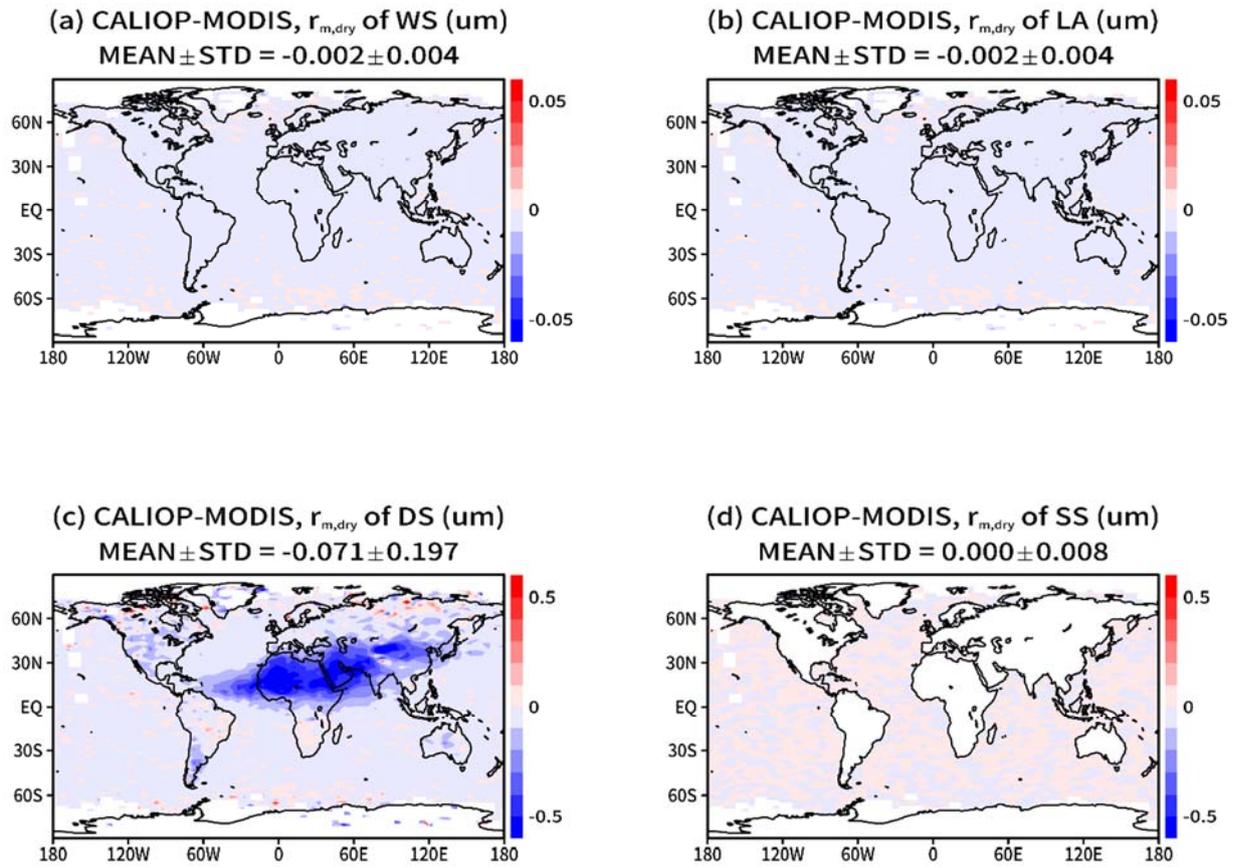


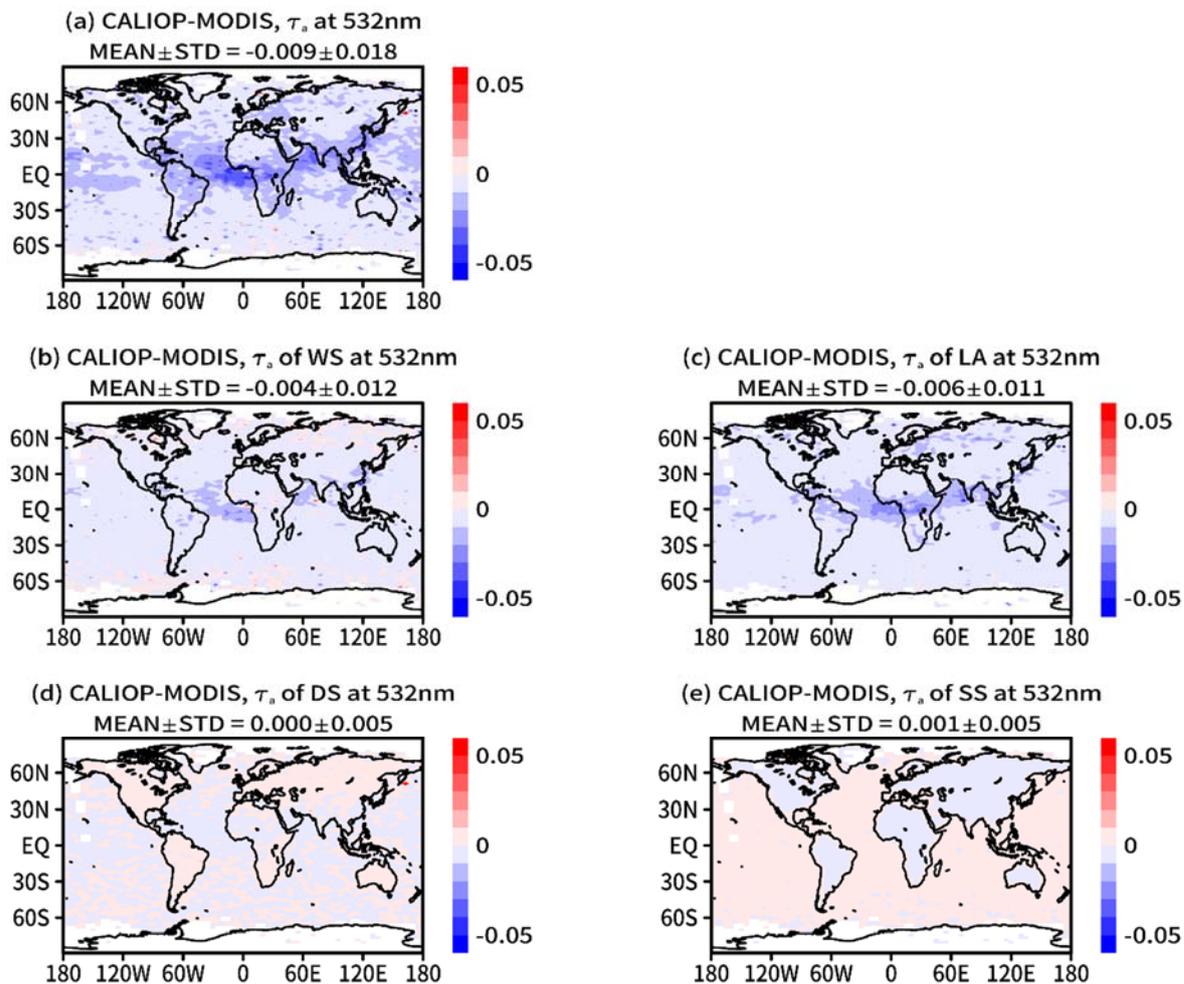
Figure S1. The AERONET stations used in the comparison of Sect. 5.2.



10 **Figure S2.** Horizontal distributions of the differences in the retrieved τ_a of (a) total aerosols, (b) WS, (c) LA, (d) DS, and (e) SS between the retrievals with spheroid and Voronoi models. At the top of each panel, MEAN \pm STD indicates the global mean and its standard deviation.



15 **Figure S3. Horizontal distributions of the differences in the retrieved $r_{m,dry}$ of (a) WS, (b) LA), (c) DS, and (d) SS between the retrievals with spheroid and Voronoi models. At the top of each panel, $MEAN \pm STD$ indicates the global mean and its standard deviation.**



20 Figure S4. Horizontal distributions of differences in the retrieved τ_a of (a) total aerosols, (b) WS, (c) LA, (d) DS, and (e) SS between the retrievals with BC volume fractions of 15 % and 30 %. At the top of each panel, $\text{MEAN} \pm \text{STD}$ indicates the global mean and its standard deviation.