



## Supplement of

## Measurement Report: Determination of aerosol vertical features on different timescales over East Asia based on CATS aerosol products

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## Supplements



**Figure S1.** Vertical profiles of annual mean normalized aerosol extinction coefficients observed from CALIOP and CATS at 1064 nm over East Asia in 2017.



**Figure S2.** Spatial distributions of AOTs from CATS at 1064 nm during 2015-2017 by season below 1 km, between 1 and 2 km, and above 2 km a.g.l..



Figure S3. Same as Fig. S2 but for total depolarization ratios.

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**Figure S4.** 6 h (00:00, 06:00, 12:00, 18:00 CST) vertical structure of 1064 nm aerosol extinction coefficients (km<sup>-1</sup>) observed from CATS by season over North China in relation to zonal mean regional surface altitude.



Figure S5. Same as Fig. S4 but for Tibetan Plateau.



Figure S6. Same as Fig. S4 but for Tarim Basin.



**Figure S7.** 6 h (00:00, 06:00, 12:00, 18:00 CST) vertical structure of total depolarization ratios observed from CATS by season over North China relation to zonal mean regional surface altitude.



Figure S8. Same as Fig. S7 but for Tibetan Plateau.



Figure S9. Same as Fig. S7 but for Tarim Basin.



Figure S10. 6 h (00:00, 06:00, 12:00, 18:00 CST) sample fractions of the available aerosol extinction coefficients observed from CATS by season over the three regions for the whole of oneday.