

Supplement of Atmos. Meas. Tech., 13, 575–592, 2020
<https://doi.org/10.5194/amt-13-575-2020-supplement>
© Author(s) 2020. This work is distributed under
the Creative Commons Attribution 4.0 License.



Supplement of

Retrieval of gridded aerosol direct radiative forcing based on multiplatform datasets

Yanyu Wang et al.

Correspondence to: Qianshan He (oxeye75@163.com) and Tiantao Cheng (ttcheng@fudan.edu.cn)

The copyright of individual parts of the supplement might differ from the CC BY 4.0 License.

20 This Supplementary Information (SI) includes 4 figures.

Supplementary Figures:

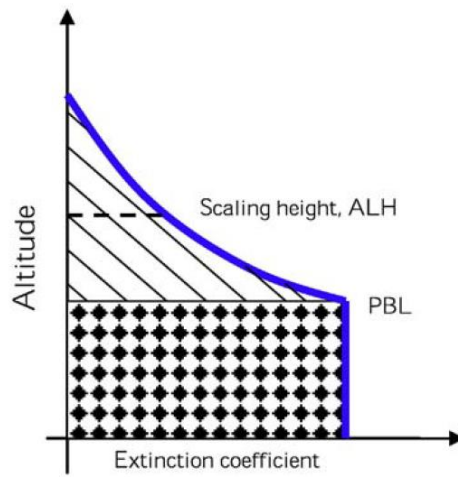
Figure S1. Sketch map of aerosol vertical profile.

Figure S2. MODIS Terra true color map composed by 1, 4, and 3 channels on October 18, 2014 (<https://worldview.earthdata.nasa.gov/>).

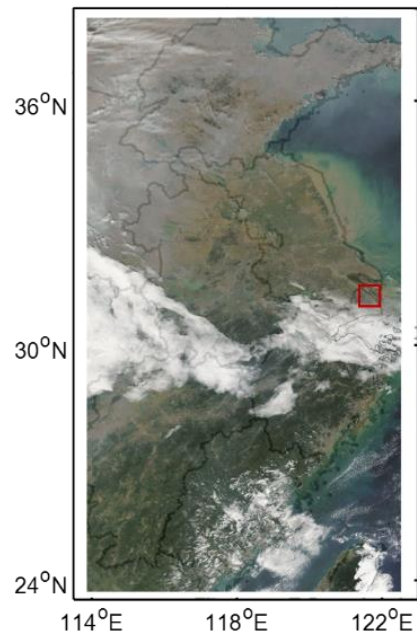
25 **Figure S3.** The response of downward radiative fluxes at the surface (F_{d_sur}), upward radiative fluxes at the surface (F_{u_sur}), aerosol direct radiative forcing (ADRF) to different parameters (AOD, SSA, ASY, albedo, columnar water vapor and ozone) in the sensitivity test.

Figure S4. The occurrence frequency of annual ADRF for each grid cell in the North and South of East China during 2000-2016.

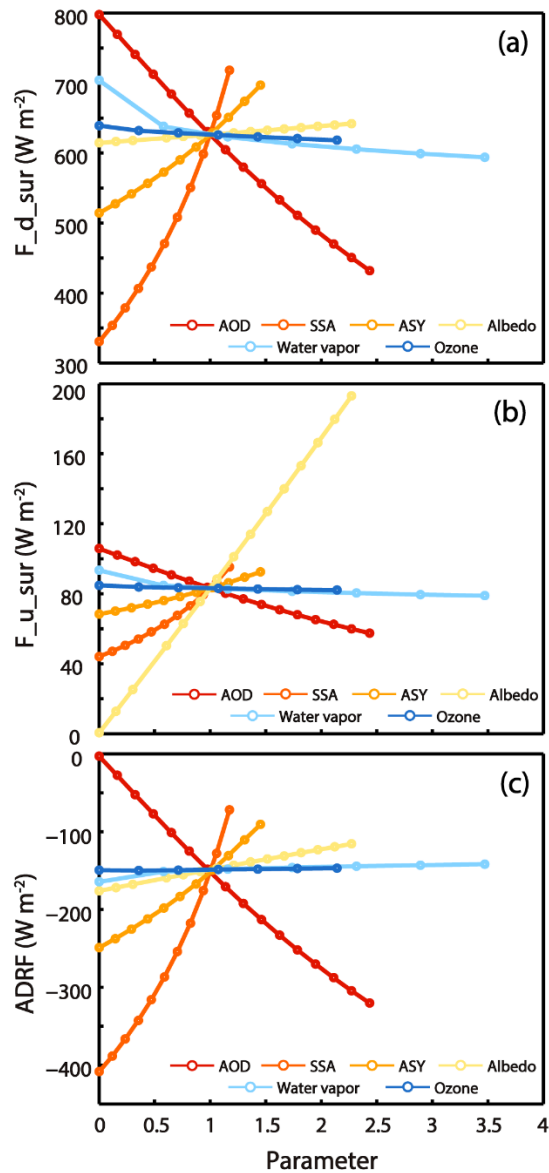
30



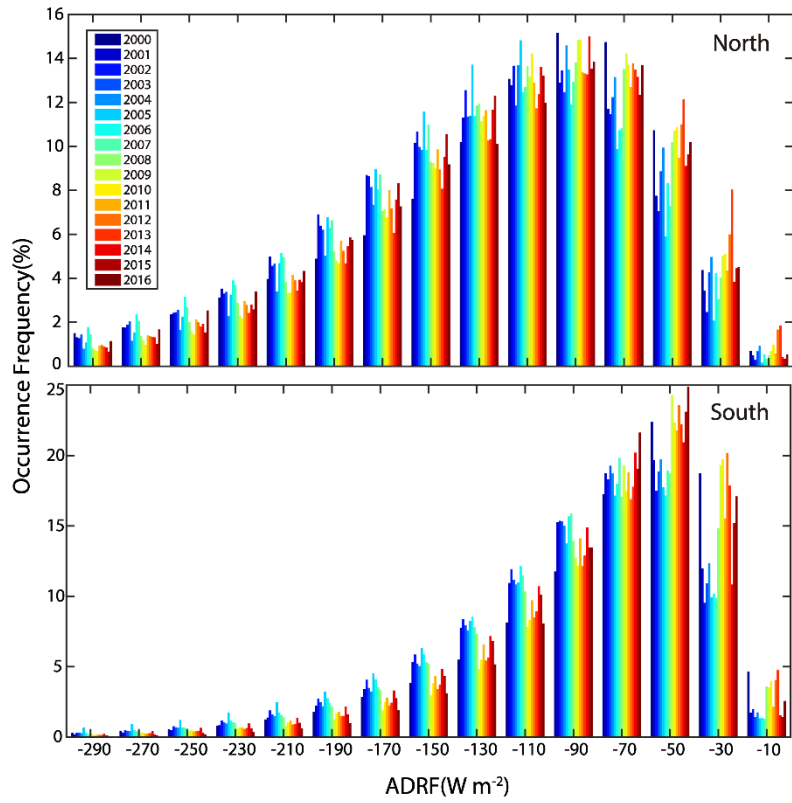
35 **Figure S1. Sketch map of aerosol vertical profile (He et al., 2008). Two-layer aerosol model is characterized by aerosol well-mixed in the PBL and exponential decay of the aerosol extinction coefficient with altitude above the top of PBL.**



40 **Figure S2. MODIS Terra true color map composed by 1, 4, and 3 channels on October 18, 2014** (<https://worldview.earthdata.nasa.gov/>). The red rectangle box (40*40km) is the MODIS AOD average window in Baoshan pyranometers site.



45 **Figure S3.** The response of downward radiative fluxes at the surface (F_{d_sur}), upward radiative fluxes at the surface (F_{u_sur}), aerosol direct radiative forcing (ADRF) to different parameters (AOD, SSA, ASY, albedo, columnar water vapor and ozone) in the sensitivity test. The X-axis value shows the ratio of the input to the actual value to dimensionalize the parameters for comparison.



50 **Figure S4.** The occurrence frequency of annual ADRF for each grid cell in the North and South of East China during 2000-2016.