Atmospheric
Chemistry
and Physics

Supplement of

Measurement report: Rapid decline of aerosol absorption coefficient and aerosol optical property effects on radiative forcing in an urban area of Beijing from 2018 to 2021

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Table S1. Mann–Kendall trend test results (p = 0.05) for monthly mean value of σ_{ab} for PM_1 and PM_{10} from 2018 to 2021. Z is the standardized test statistic value.

	Trend	Z	sen's slope
$PM_1\ \sigma_{ab}$	Decreasing trend	-5.8134	-0.24856
$PM_{10}\ \sigma_{ab}$	Decreasing trend	-5.643	-0.29905

Table S2. Pearson correlation coefficient (R) between different aerosol optical properties and meteorological parameters (* Significant at $p < 0.05$).

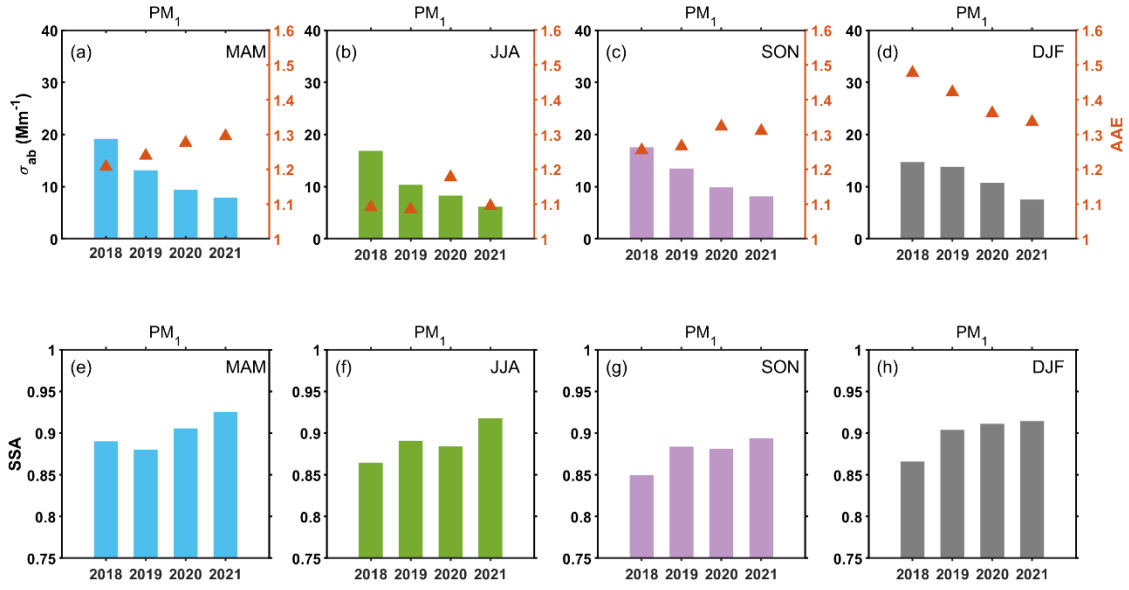|	pressure	temperature	RH	precipitation	wind speed
$PM_1\ \sigma_{ab}$	-0.10*	-0.05*	0.30*	-0.03*	-0.31*
$PM_{10}\ \sigma_{ab}$	-0.10*	-0.05*	0.30*	-0.03*	-0.30*

Figure S1. (a-d) Seasonal mean σ_{ab} (bar) for PM_1 at 550 nm, seasonal mean $AAE_{450/700}$ (triangle) for PM_1, and (e-f) seasonal mean SSA (bar) for PM_1 at 550 nm from 2018-2021.
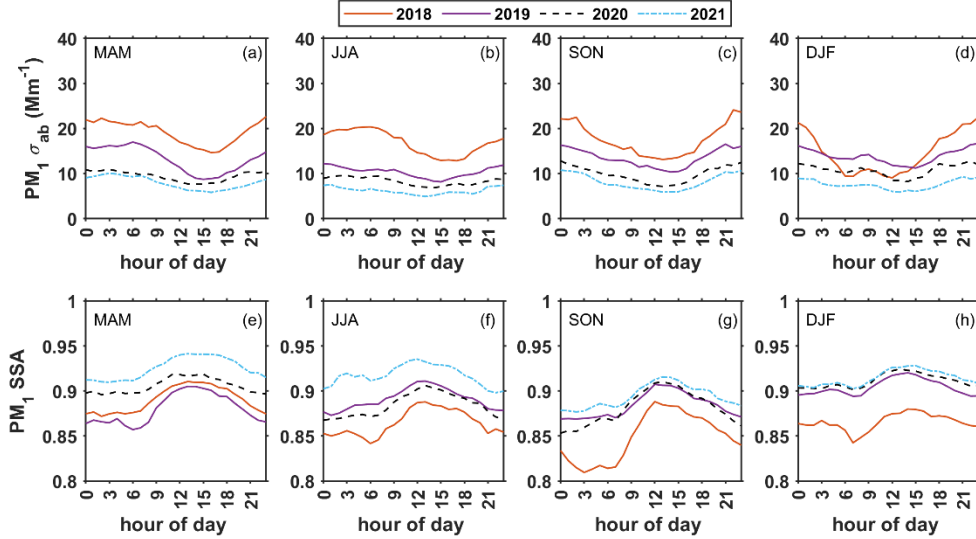

Figure S2. Diurnal variations of σ_{ab} (a-d) and SSA (e-h) at 550 nm for PM_1 from 2018 to 2021.

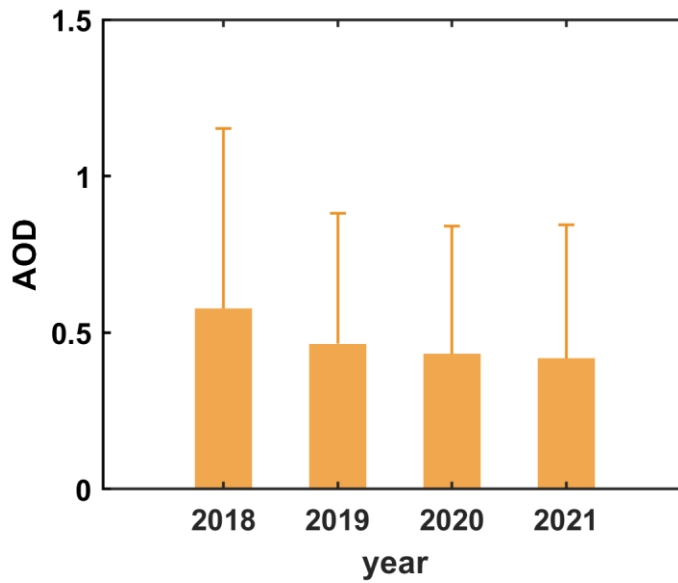**Figure S3.** The annual variation of AOD from 2018 to 2021. Errorbar represents the standard
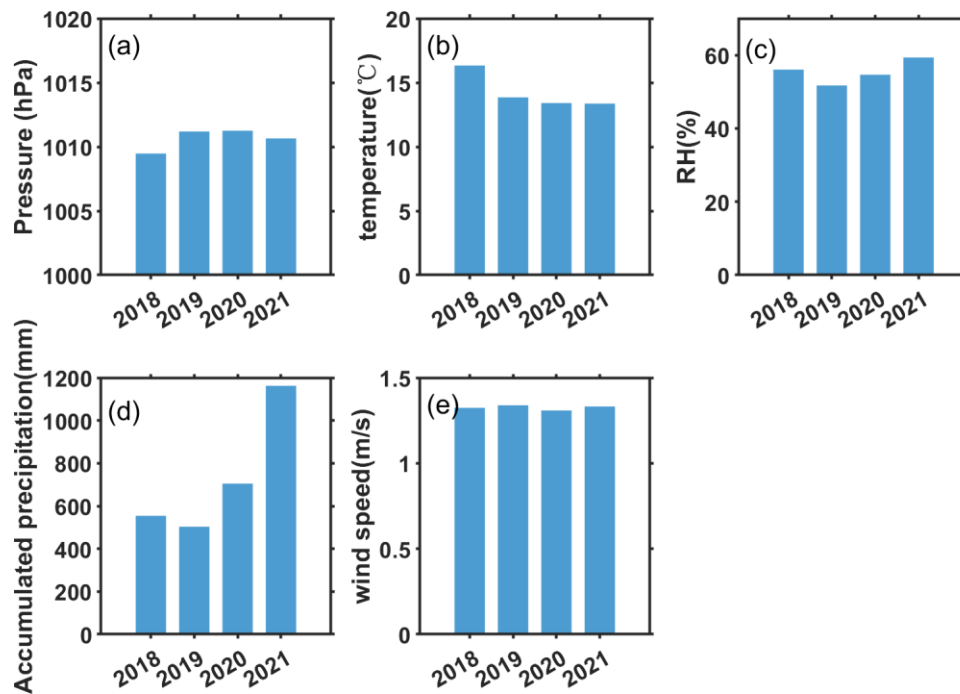
deviation. (Available from the Aerosol Robotic Network)

Figure S4. The annual variation of meteorological parameters from 2018 to 2021.