Supporting Information:

Key factors affecting single scattering albedo calculation: Implications for aerosol climate forcing

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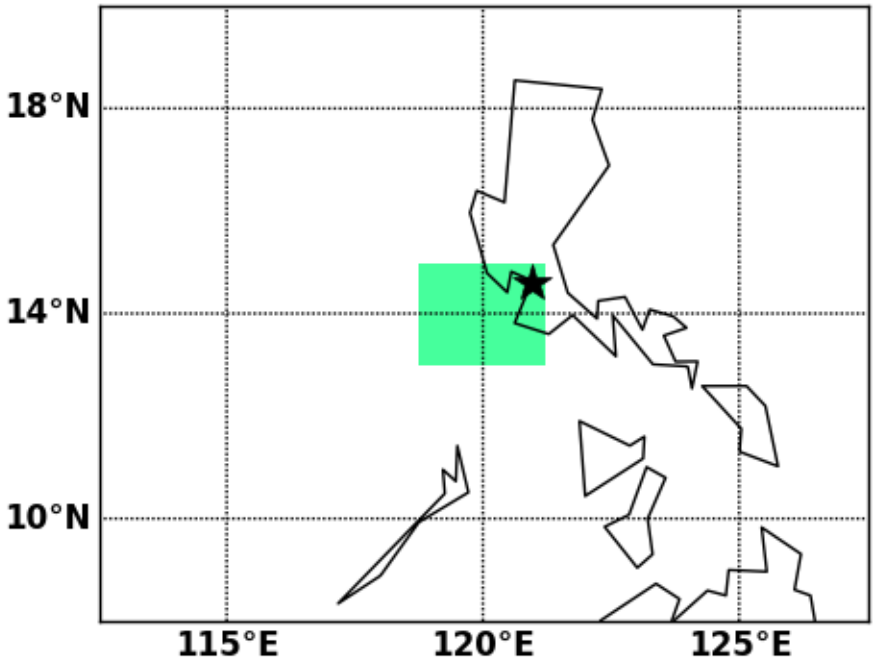

Figure S1. Observation site of SPARTAN network at Manila, Philippines. Black star indicates observation point and green box represents model grid box for the observation site.

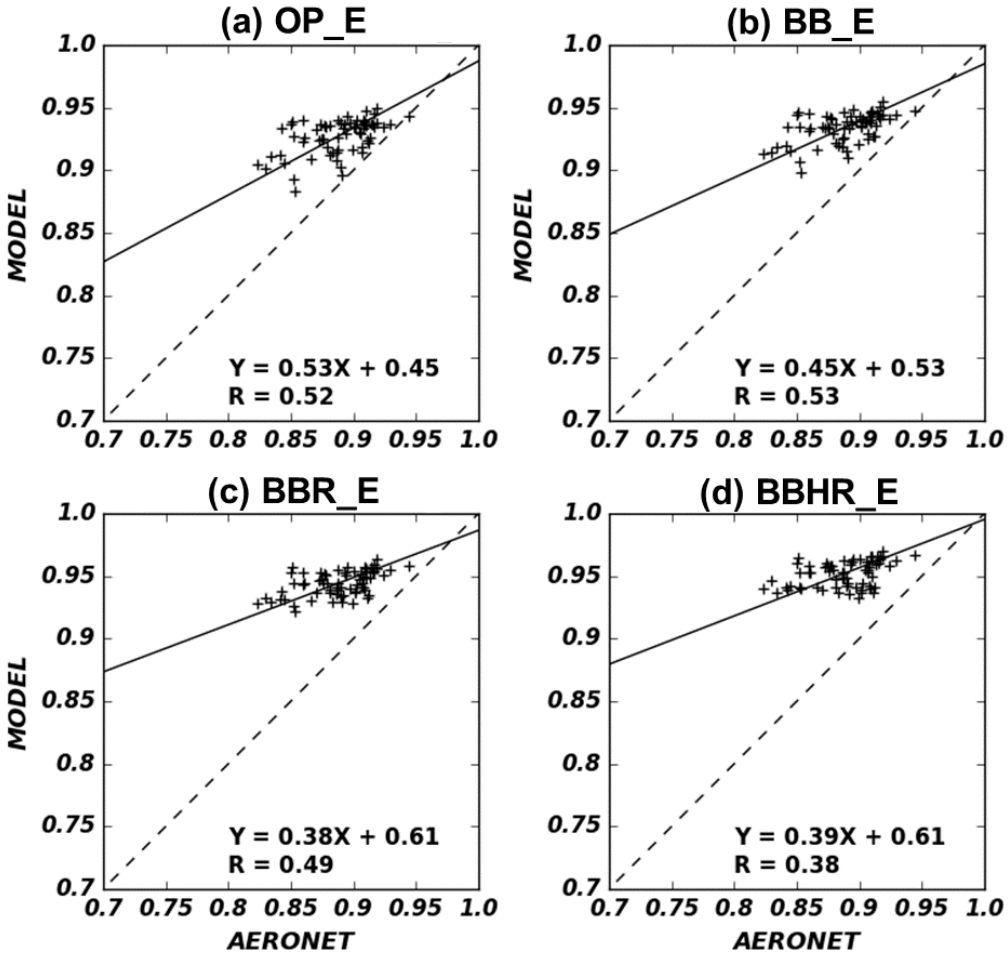

Figure **S2**. Scatter plots of simulated versus observed SSA at 440 nm for sensitivity simulations of (a) OP_E, (b) BB_E, (c) BBR_E, and (d) BBHR_E. Calculated mean values of all cases range from 0.927 to 0.952, which are by 4.4-7.2% higher than the observed mean SSA of 0.888. The lowest value is from OP_E, which is mainly caused by the lowest BC particle density of 1.0 g cm^{-3}. Because the particle density is inversely proportional to the number concentration for a given mass concentration, it causes the increase of BC absorption.

Table S1. Statistical parameters for the comparison between the simulated and the observed AOD at 500 nm. Observed mean AOD is 0.250.

Cases	Slope	Yict	R	RMSE	Mean	Mean bias
GEOS_E	0.769	0.03	0.82	0.137	0.224	-0.026
OPAC_E	0.791	0.03	0.82	0.135	0.230	-0.021
BB_E	0.780	0.03	0.82	0.136	0.227	-0.023
BBR_E	0.784	0.03	0.82	0.136	0.228	-0.022
BBHR_E	0.775	0.03	0.82	0.137	0.226	-0.025
GEOS_H	0.489	0.00	0.73	0.214	0.120	-0.130
GEOS_C	0.488	0.00	0.73	0.214	0.120	-0.130
OPAC_H	0.490	0.00	0.73	0.213	0.121	-0.129
OPAC_C	0.489	0.00	0.73	0.213	0.121	-0.130
GEOS_BR_E	0.777	0.03	0.83	0.135	0.226	-0.024
GEOS_DK_E	0.631	0.05	0.78	0.158	0.204	-0.046
GEOS_DI_E	0.652	0.04	0.79	0.153	0.208	-0.043
GEOS_BR_DK_E	0.641	0.05	0.78	0.156	0.206	-0.045
BB_BR_DK_E	0.652	0.05	0.78	0.154	0.208	-0.042
BBR_BR_DK_E	0.656	0.05	0.79	0.153	0.210	-0.041
BBHR_BR_DK_E	0.647	0.05	0.78	0.155	0.207	-0.043
GEOS_BR_DI_E	0.661	0.04	0.80	0.150	0.209	-0.041
BB_BR_DI_E	0.672	0.04	0.80	0.149	0.212	-0.038
BBR_BR_DI_E	0.676	0.04	0.80	0.148	0.213	-0.037
BBHR_BR_DI_E	0.667	0.04	0.80	0.149	0.211	-0.040