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Supplement of

Potential impact of carbonaceous aerosol on the upper troposphere and lower stratosphere (UTLS) and precipitation during Asian summer monsoon in a global model simulation

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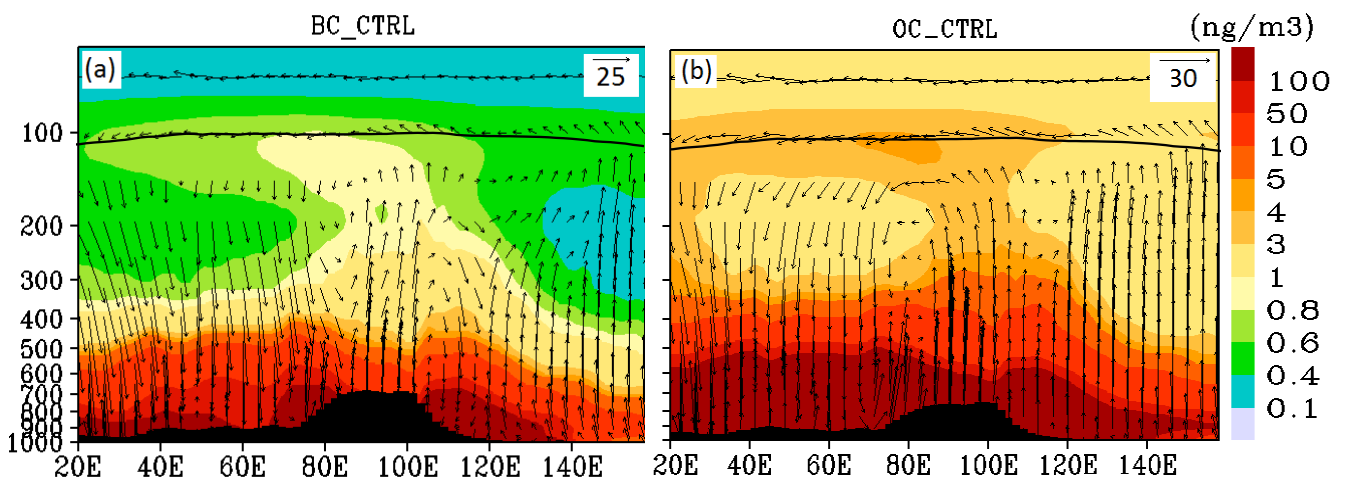


Figure S1: Longitude-pressure cross section (averaged for 15°N - 35°N and for the monsoon season) obtained from CTRL simulations for (a) BC aerosols (ng m^{-3}), (b) OC aerosols (ng m^{-3}). Black arrows indicate wind vectors. The vertical velocity field has been scaled by 1000.

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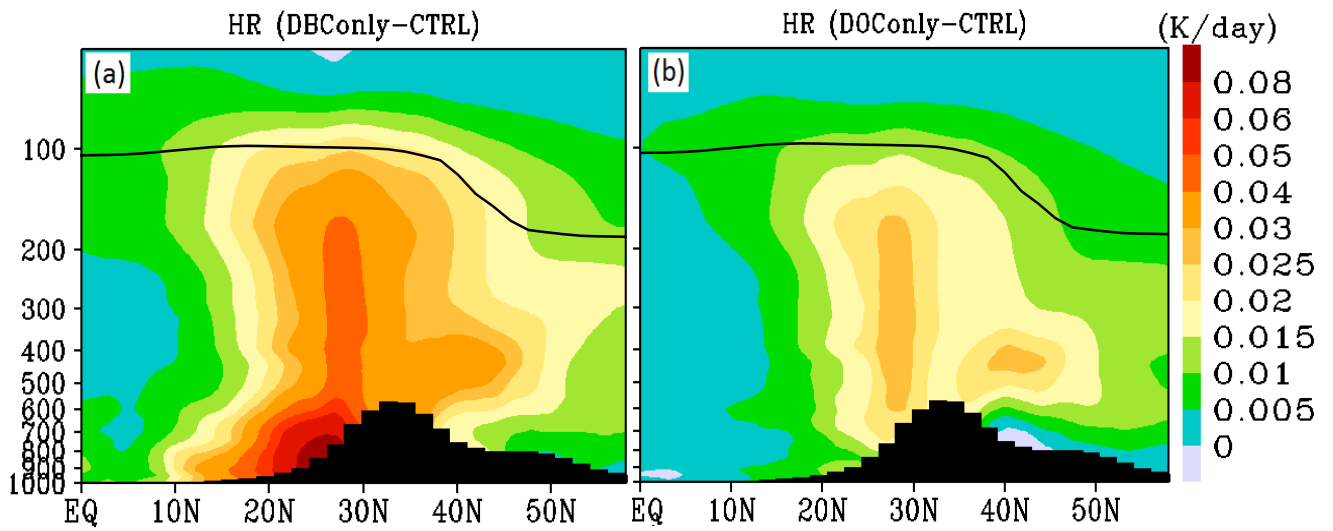
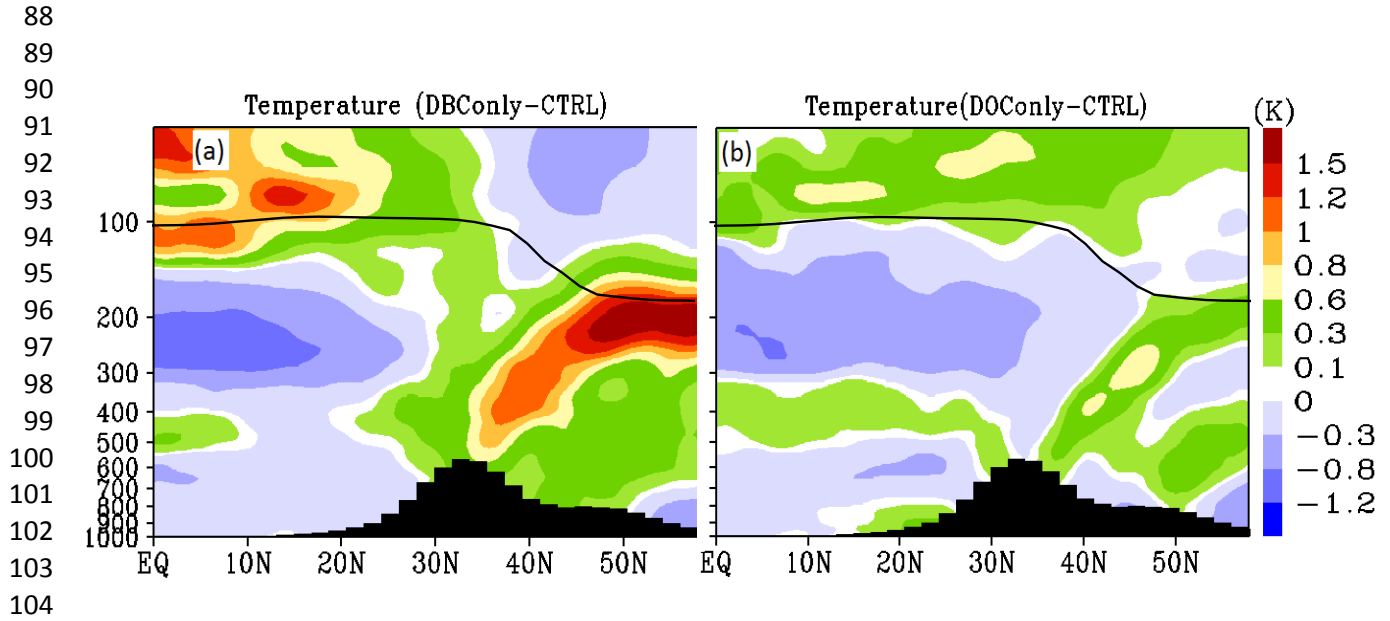


Figure S2: Latitude-pressure cross section of anomalies in heating rates (K day^{-1}) averaged for $80^\circ\text{E} - 110^\circ\text{E}$ and for the monsoon season for (a) BC aerosols (DBConly-CTRL) and (b) OC aerosols (DOConly-CTRL).



105 Figure S3: Latitude-pressure cross section of anomalies in temperature (K) averaged for 80°E -
106 110°E and for the monsoon season for (a) BC aerosols (DBConly-CTRL), (b) OC aerosols
107 (DOConly-CTRL).

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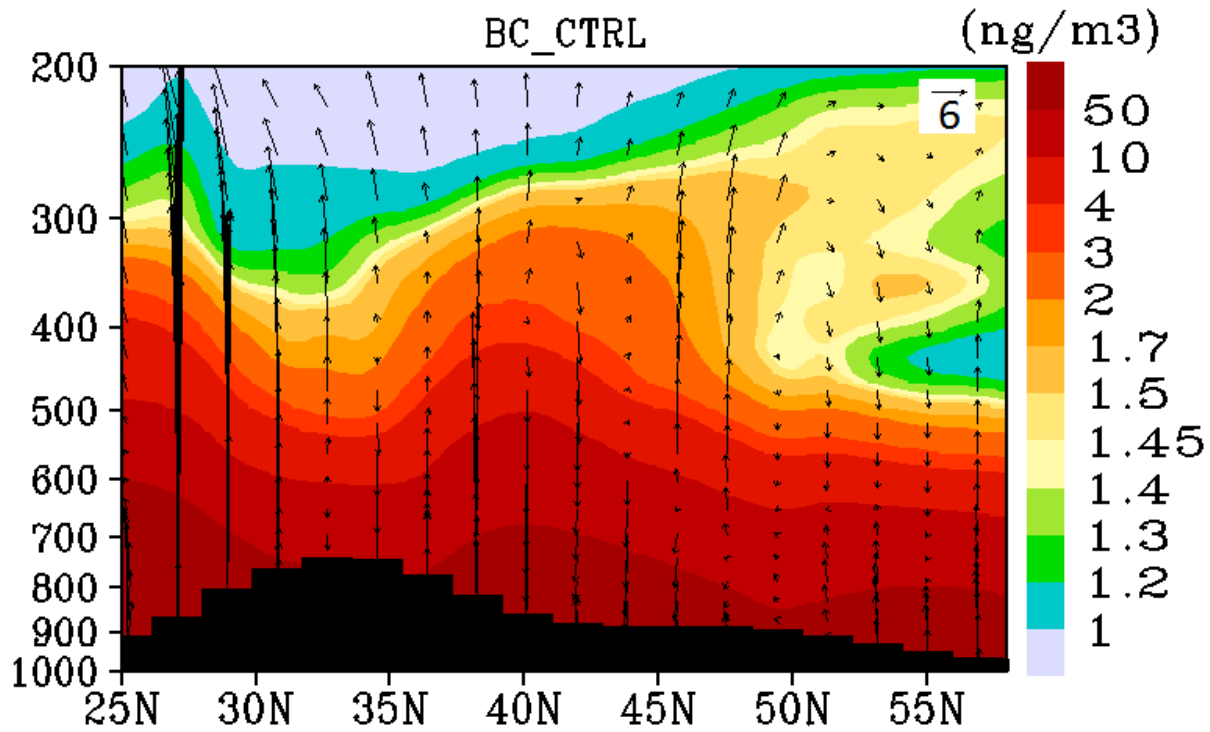


Figure S4: Latitude-pressure cross section of BC aerosols (ng m^{-3}) obtained from CTRL simulations averaged for $80^{\circ}\text{E} - 110^{\circ}\text{E}$ and for the monsoon season. The vertical velocity field has been scaled by 1000.

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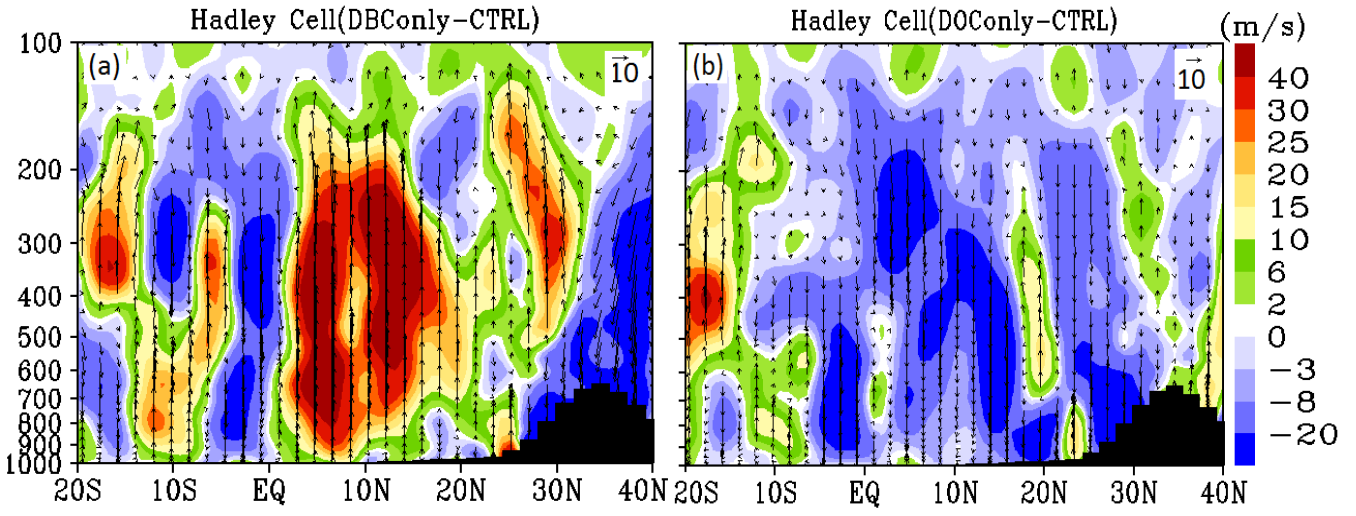


Figure S5: Difference in the meridional circulation (m s^{-1}) averaged for $70^{\circ}\text{E}-90^{\circ}\text{E}$ and for the monsoon season for (a) BC aerosols (DBCOnly-CTRL) and (b) OC aerosols (DOOnly-CTRL). The vertical velocity field has been scaled by 1000.