Supporting Information for *Distinct surface response to black carbon aerosols*

Tang et al.

This supporting information contains Fig. S1-Fig. S6.
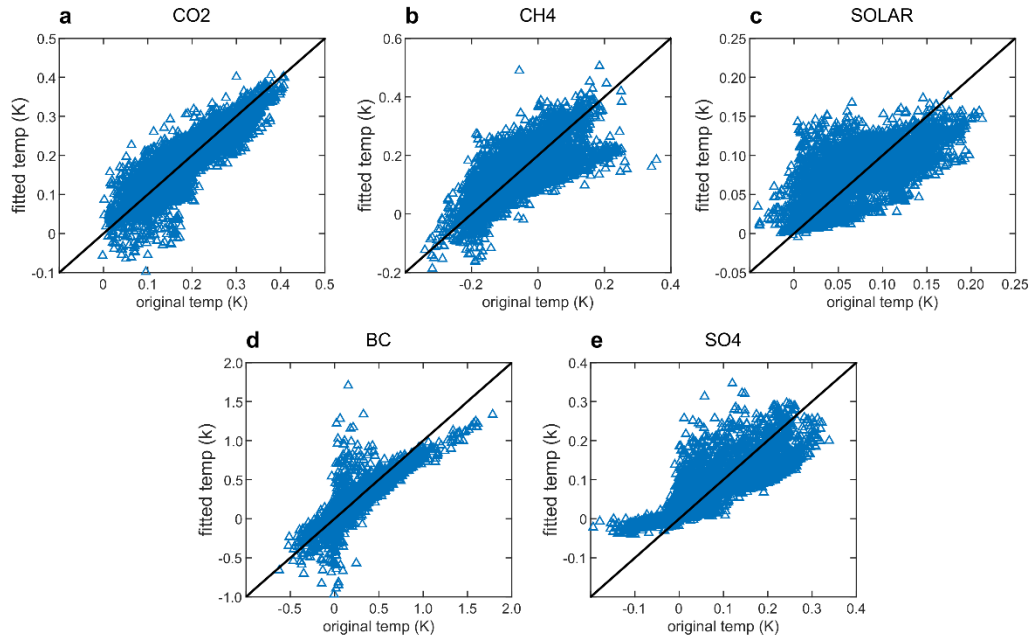
Figure S1: Comparison of original $\triangle T$ and fitted $\triangle T$ from the linear regression models. The black thick lines in each plot are one-one lines.
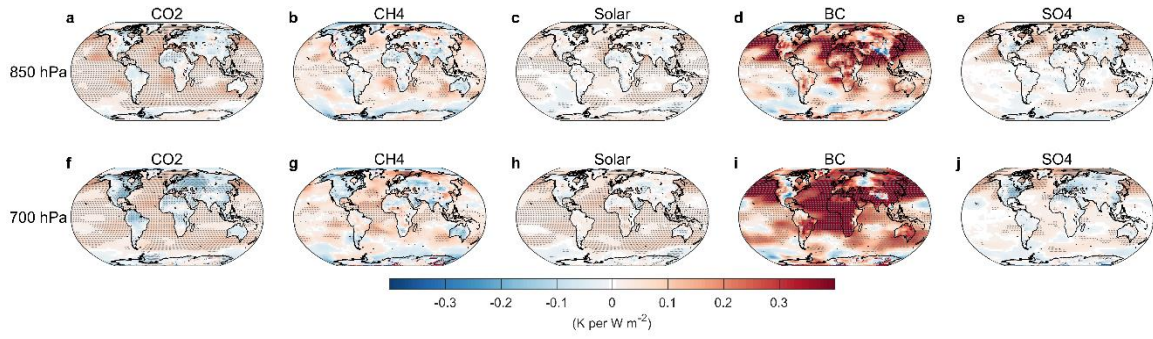
Figure S2: Same as Figure 3 in the main text, but for LTS of 850 hPa and 700 hPa. Positive anomalies indicate more stable atmosphere.
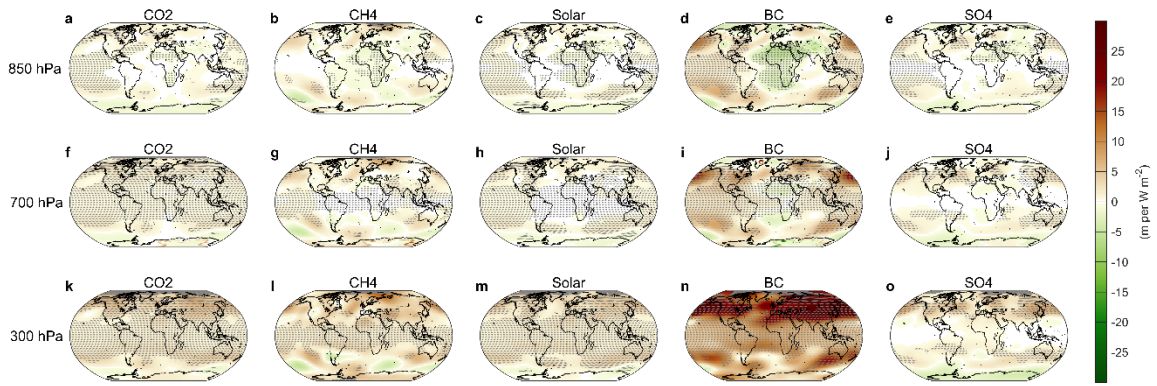
Figure S3: Same as Figure 3 in the main text, but for geopotential height changes at 850 hPa, 700 hPa and 300 hPa.
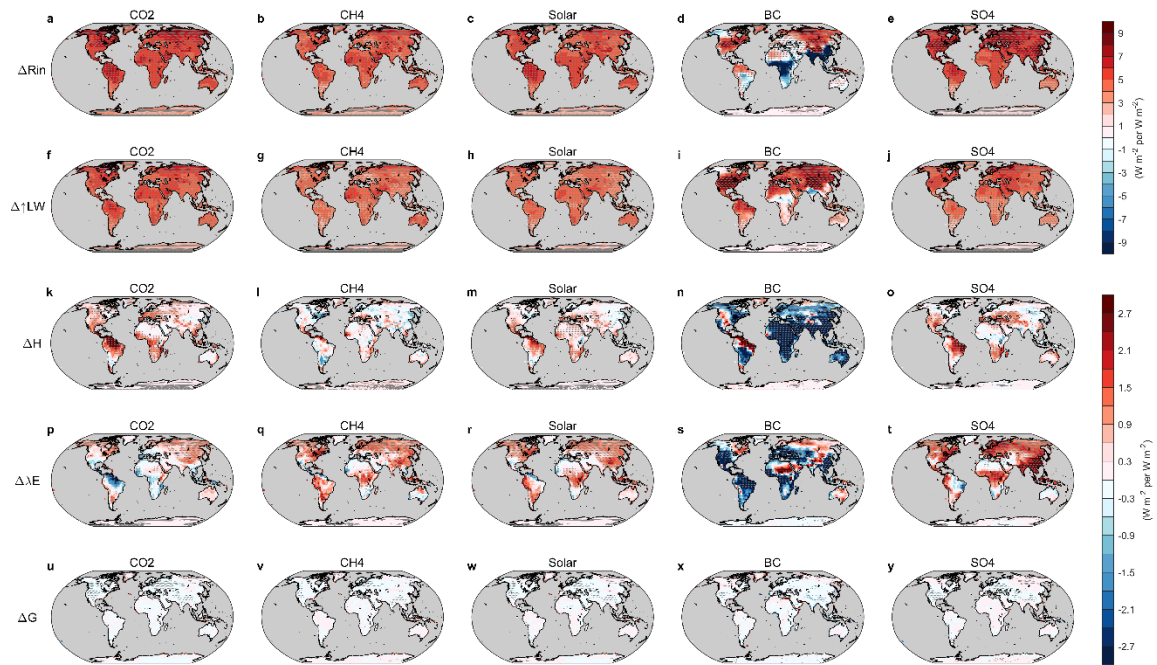
Figure S4: Same as Fig. 3 in the main text, but for the coupled simulations (near-equilibrium state).
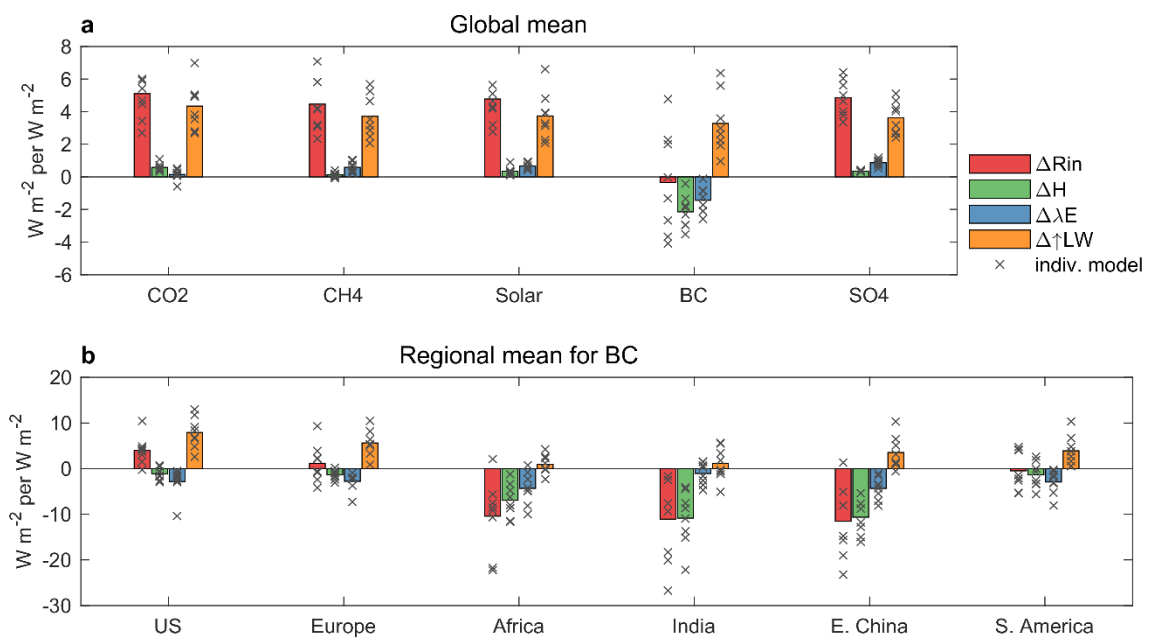
Figure S5: Same as Fig. 4 in the main text, but for the coupled simulations (near-equilibrium state).
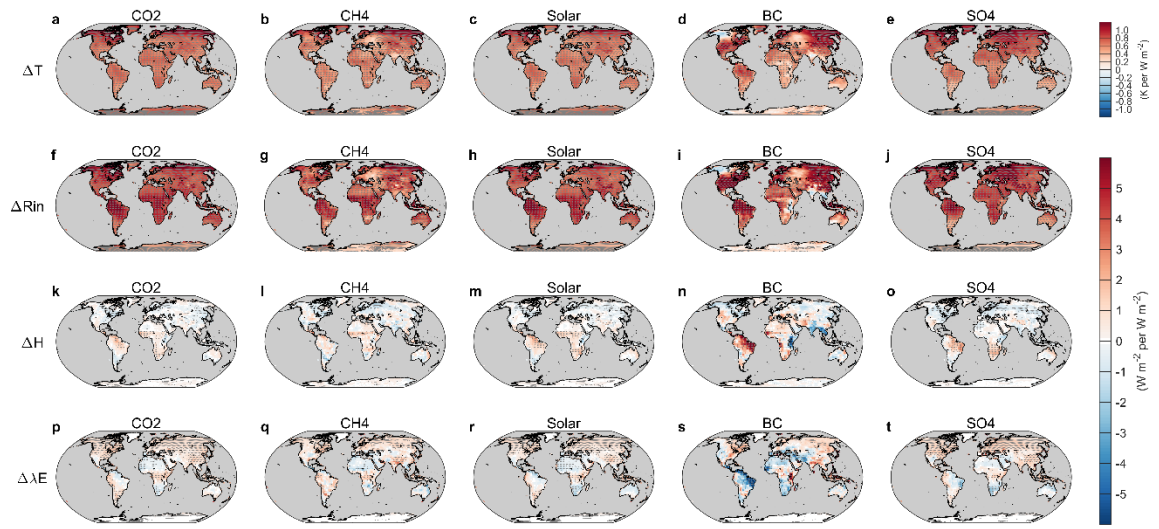
Figure S6: Same as Fig. 3 in the main text, but for the slow response, which is obtained by subtracting fast simulations from coupled simulations.