

1 **Supplementary Material for Stronger Arctic**
2 **Amplification from Ozone-Depleting Substances**
3 **than from Carbon Dioxide**

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20 **1. Introduction**

21 In this document we present three supplemental figures that are mentioned in the main
22 text. Figure 1 shows the seasonal evolution of Arctic-mean surface air temperature
23 (SAT) and sea-ice extent (SIE) trends for *ALL*, *CO2*, *ODS*, *CO2&ODS*, *CO2+ODS*, and
24 *Strat-O₃*. Figure 2 shows the statistics of annual Arctic-mean SIE trends for *ALL*, *CO2*,
25 *ODS*, *CO2&ODS*, *CO2+ODS*, and *Strat-O₃*. Figure 3 present the spatial distributions
26 of *CO2* and *ODS* annual feedback parameters.

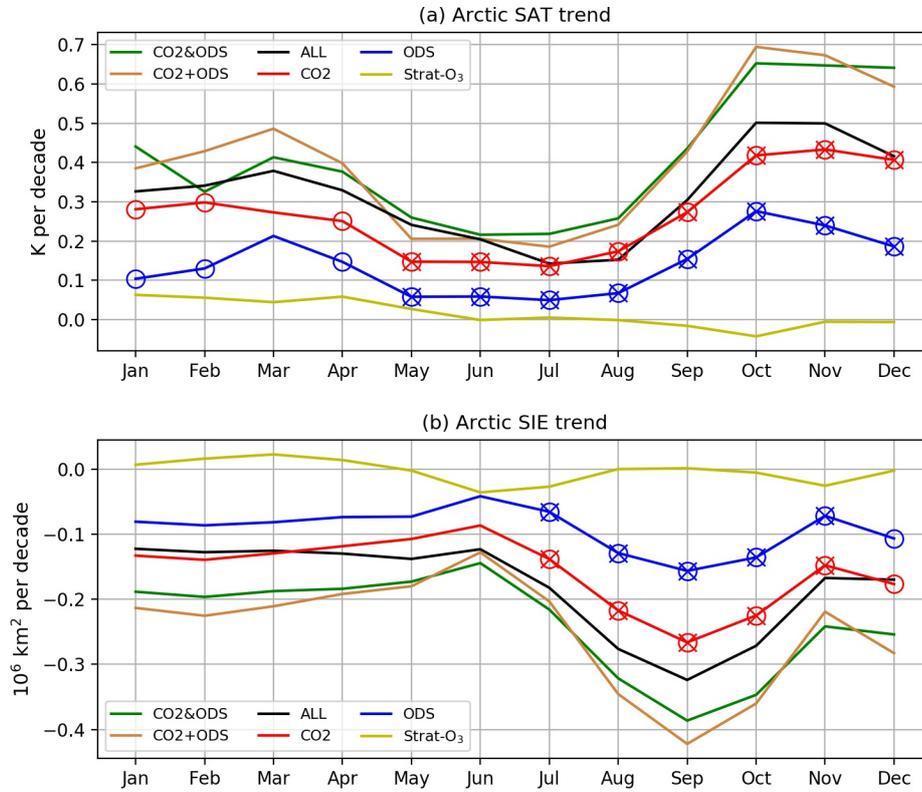
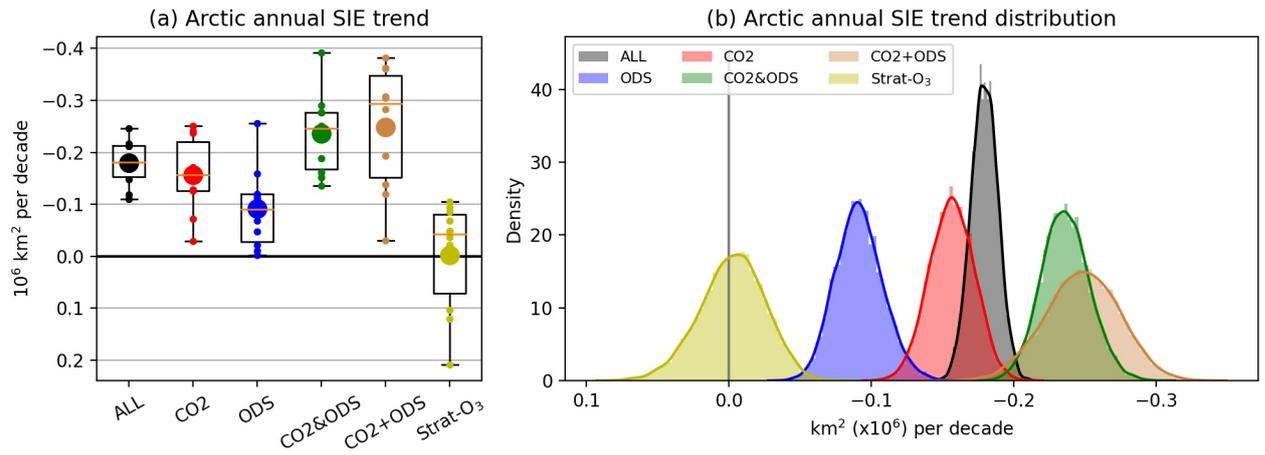
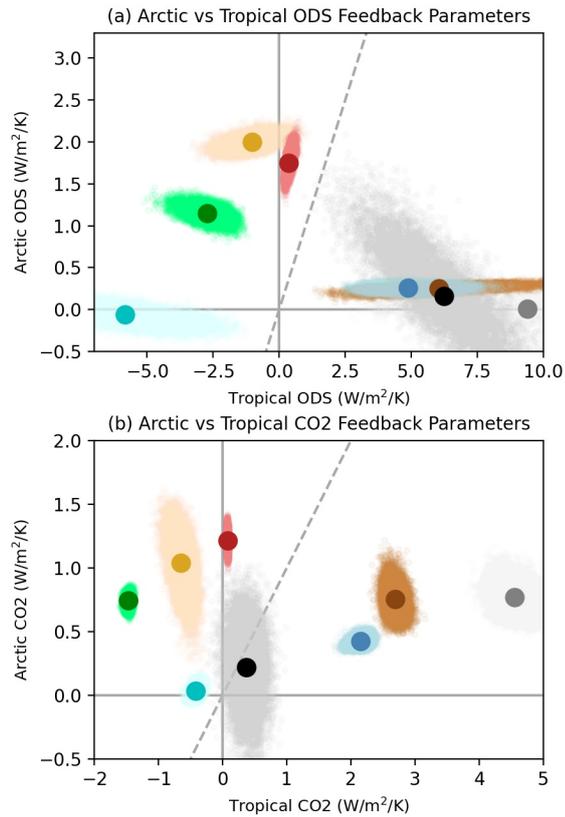


Figure 1. (a) The seasonal evolution of the Arctic-mean surface air temperature (SAT) trends for *ALL*, *CO2*, *ODS*, *CO2&ODS*, *CO2+ODS* (sum of *CO2* and *ODS*), and *Strat-O₃*. The open circle (cross sign) means that the difference between *ODS* and *CO2* ensemble means is statistically significant at 90% (95%) level using a Student's *t* test. (b) is the same as (a) but for sea-ice extent (SIE).



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Figure 2. (a) Box-and-whisker plots of the annual Arctic-mean sea-ice extent (SIE) trends with the whiskers denoting the ranges of ten ensemble members and the orange horizontal lines the medium values for *ALL*, *CO2*, *ODS*, *CO2&ODS*, *CO2+ODS* (sum of *CO2* and *ODS*), and *Strat-O₃*. The big dots are the ensemble-mean values, while the smaller ones are for each member. (b) Density functions for 10,000 re-sampled annual Arctic-mean SIE trends in the four sets of simulations.



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Figure 3. (a) The *ODS* Arctic vs. tropical annual feedback parameters for Planck' (golden), lapse-rate (green), surface albedo (dark red), water vapor (dark blue), net cloud (longwave plus shortwave, cyan), and convergence of atmospheric and oceanic heat transports (black), as well as forcing (dark brown) and residual (gray). The big dots denote the ensemble-mean values and the dots with light colors the values of 10,000 re-samples. The dashed gray line has one-to-one slope. (b) is the same as (a), but for *CO₂*.