

Data From:

Investigating the linear dependence of direct and indirect radiative forcing on emission of carbonaceous aerosols in a global climate model

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The dataset contains processed model fields used to generate data, figures and tables in the paper. Raw model output fields from CAM5 simulations are available through NERSC upon request.

Data.zip: Processed model fields stored in MATLAB .mat files.

- a. Monthly average of selected model fields in 96 x 144 grid cells, with the spatial resolution from original CAM5 model output (1.9° by 2.5°).
- b. Processed model fields include CCN, CDNC, LWP, DRF and IRF.
- c. Data files are named with the suffix of emission reduction scenarios AMBC, ASBC, AMOC, ASOC, ASdom, ASsurf, ASsurfBC and ASsurfOC, indicating BC or/and OC are reduced from certain regions (AM - North America or AS - Asia) for all sectors or in certain sectors (dom - residential sector, surf - surface emission).
- d. In this dataset, forcing was originally calculated by choosing 100% emission as the base case, which is different from the final presentation in the paper using zero emission as base case. However, choice of base case in the forcing calculation does not affect ENF and linearity, because they are based on the change of forcing.
- e. The dataset also includes two files with simulated dust burden under AMBC reduction scenario in free-run mode (SpeciesBurden_freerun) and offline mode (BurdenOther_AMBC_offline).