## Summary – absolute difference surface flux of BC surface flux of SO2 no-so4 - no-so4 1.420708e-18 6.643253e-19 $\Delta\,\text{emibc}\,(\text{kg}\,\text{m}^{-2}\,\text{s}^{-1})$ $\Delta$ emiso2 (kg m $^{-2}$ s $^{-1}$ ) 4e-13 -9.205746e-20 -8.484402e-19 0e+00 -1.604823e-18 SHIAND Art allantic Art allatic SHJand arctic AH indian diopal land land SOR surface concentration of BC surface concentration of SO4 - no-so4 - no-so4 0.0e+00 2e-12 $\Delta$ mmrbc (kg kg –1) $\Delta$ mmrso4 (kg kg-1) -5.0e-1 0e+00 -1.0e-10 -2e-12 -1.5e-10 -4e-12 AH allaniic SHJand Art allatic diopal arctic surface concentration of SO2 surface concentration of DMS - no-so4 - no-so4 1.0e-10 1e-12 7.5e-11 7.5e-11 7.5e-11 ∆dms (kg kg-1) 0e+00 -1e-12 2.5e-1 -2e-12 0.0e+00diopal Art Pacific SHJand oth of SHJand WH indian WH 388 AH Static AH lidigit AH Sacitic AH Sas CAM-ATRAS E3SM OsloCTM3 GISS modelE

CESM

CESM2

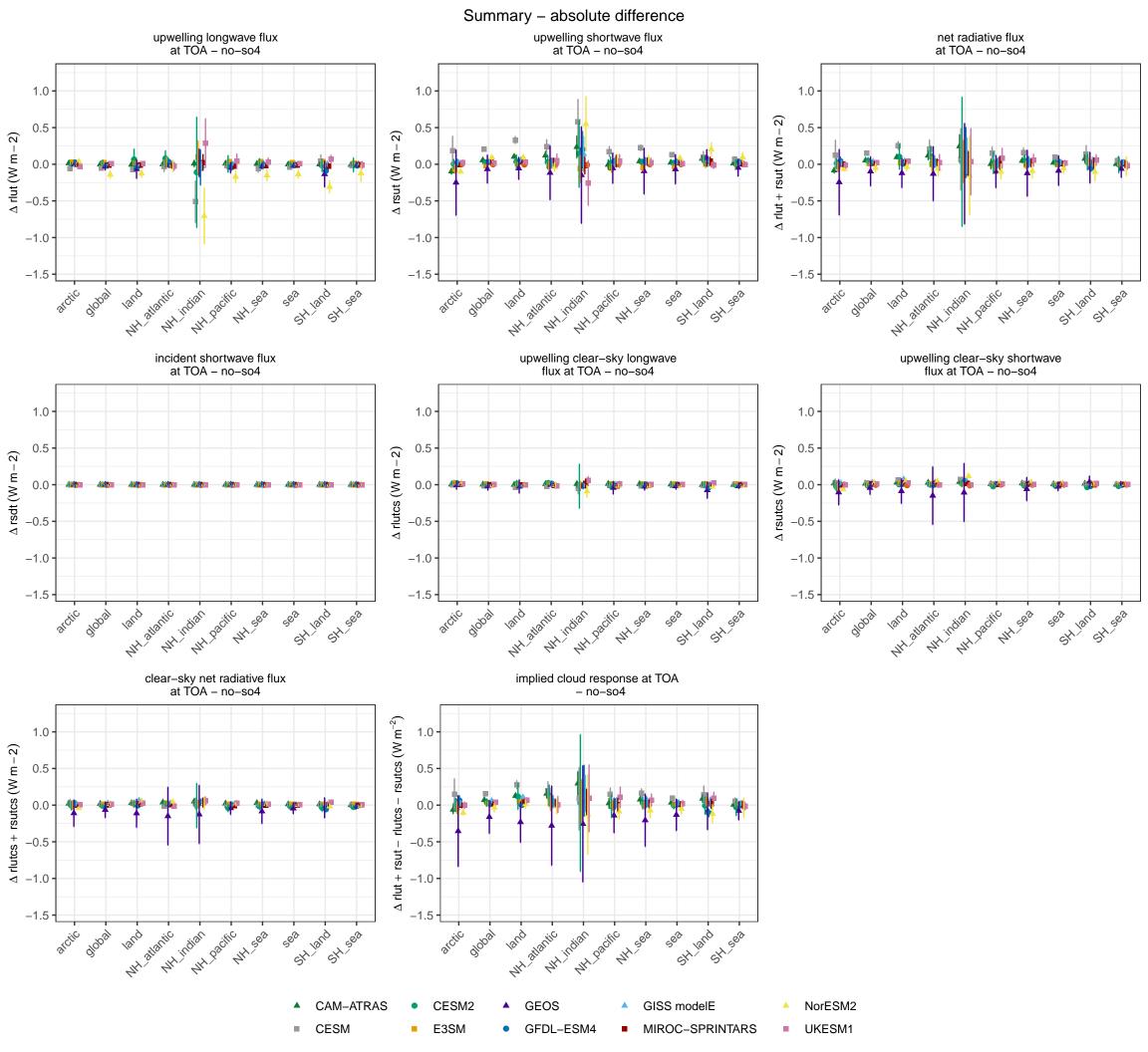
**GEOS** 

GFDL-ESM4

MIROC-SPRINTARS

NorESM2

UKESM1



## Summary – absolute difference ambient aerosol optical total cloud cover thickness at 550nm - no-so4 percentage - no-so4 0.00 0.5 -0.05∆ od550aer 01.0− 01.00 ∆ clt (percent) 0.0 -0.5-0.15SHIRING AH allahic AH allantic SHI land diopal diopal aictic AH jidian Art indian SOR convective cloud cover surface cloud cover percentage - no-so4 - no-so4 0.2 0.2 0.1 0.0 Acltc (percent) ∆cl (percent) -0.2 -0.1-0.4-0.2SHJand SHIRING diopal AH jidian aictic dida arctic and Art alamic Art indian Art Bacine Art sea ice water path - no-so4 0.002 0.001 $\Delta clivi (kg m^{-2})$ 0.000 -0.001-0.002SHIRING diopal arctic Art allaritic Art indian Art Pacific

CAM-ATRAS

CESM

CESM2

E3SM

**GEOS** 

GFDL-ESM4

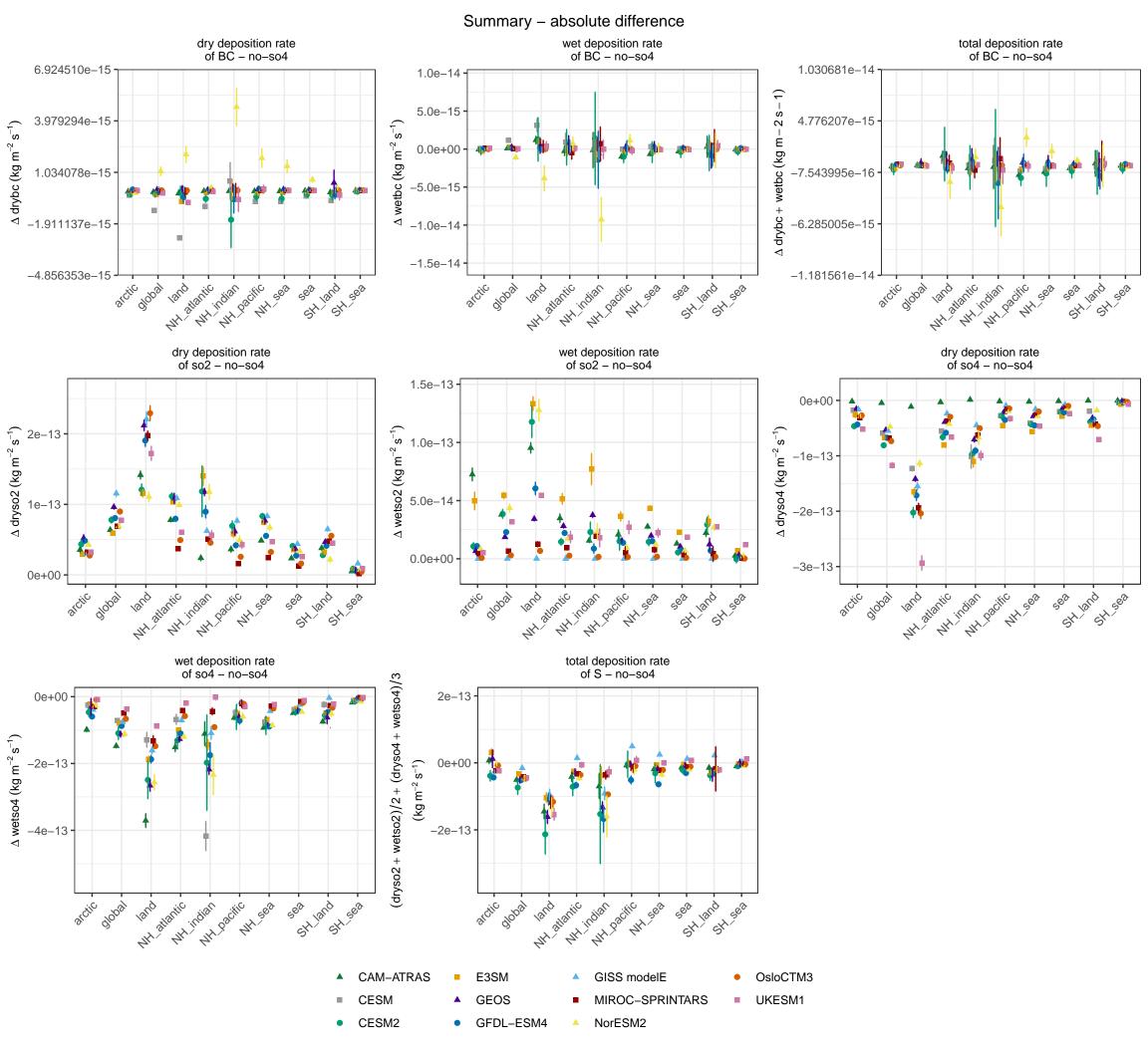
GISS modelE

NorESM2

MIROC-SPRINTARS

OsloCTM3

UKESM1



## Summary – absolute difference column mass burden of BC column mass burden of SO2 - no-so4 - no-so4 2.0e-07 2.5e-09 1.5e-07 $\Delta loadso2~(kg~m^{-2})$ $\Delta loadbc \, (kg \; m^{-2})$ 0.0e+001.0e-07 -2.5e-09 5.0e-08 -5.0e-09 0.0e+00-7.5e-09 SHI land AH allantic Art Pacific SHJand diopal Art indian arctic arctic SO4 lifetime column mass burden of SO4 - no-so4 - no-so4 6e-07 6e-07 ∆ loadso4/(wetso4 + dryso4) (days) $\Delta loadso4~(kg~m^{-2})$ 3e-07 3e-07 0e+00 0e+00 -3e-07-3e-07 SHJand AH allaniic SHIAND diopal diopal alctic arctic Sop d HH dianis HH Indian HH Jacilic HH sea SO2 timescale - no-so4 2.0e-07 ∆ loadso2/emiso2 (days) 1.5e-07 1.0e-07 5.0e-08 0.0e+00 Art allahic diopal arctic Art Pacific SHJand ST SE land Art indian CAM-ATRAS OsloCTM3 E3SM GISS modelE

CESM

CESM2

**GEOS** 

GFDL-ESM4

MIROC-SPRINTARS

NorESM2

■ UKESM1