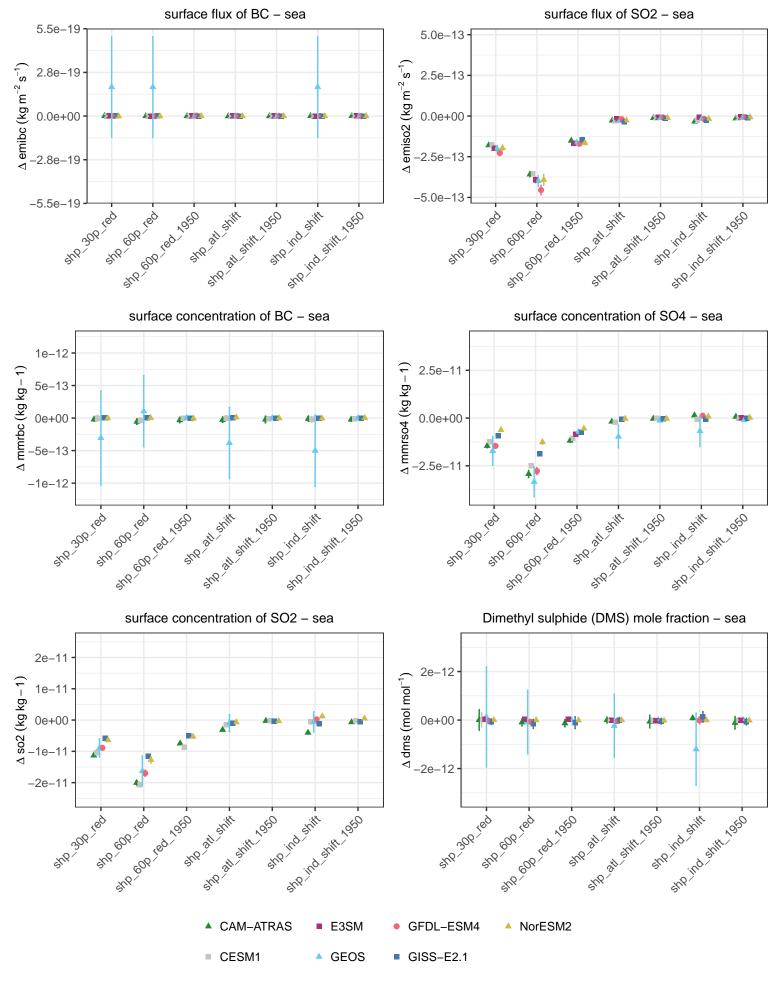
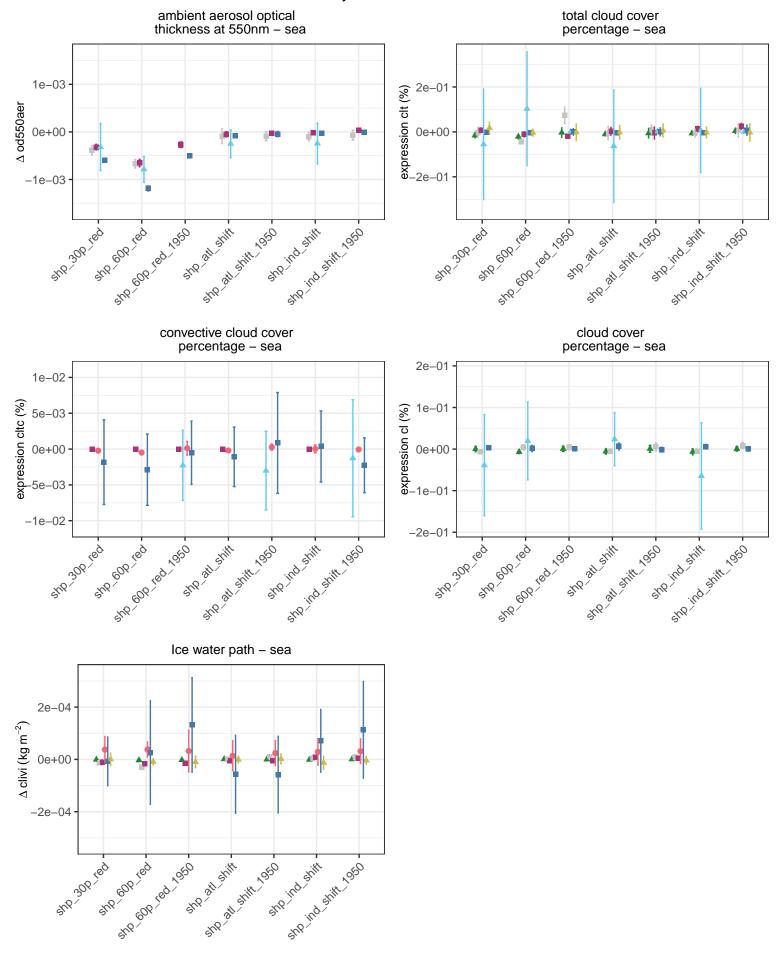
# Summary – absolute difference



#### Summary - absolute difference upwelling longwave flux upwelling shortwave flux net radiative flux at TOA - sea at TOA – sea at TOA - sea 1.0 1.0 1.0 $\Delta$ rlut + rsut (W m – 2) $\Delta$ rlut (W m – 2) $\Delta \operatorname{rsut}(\operatorname{Wm}-2)$ 0.5 0.5 0.5 0.0 0.0 0.0 -0.5 -0.5-0.5-1.0-1.0-1.0sho ind shift 1950 +10 600 red 1950 sto all stift, 1950 310 600 red 1950 sho ind shift 1950 sto all still, oso stip all stift. Jose she ind shift snP at shift she ind shift STR all STIFF she ind shift sub end ing snp at shift elb log sub end ing clear-sky net radiative flux implied cloud response at TOA incident shortwave flux at TOA - sea at TOA - sea $\Delta$ rlut + rsut - rlutcs - rsutcs (W m<sup>-2</sup>) $\Delta$ rlutcs + rsutcs (W m – 2) 1.0 1.0 1.0 $\Delta \operatorname{rsdt} (\operatorname{Wm} - 2)$ 0.5 0.5 0.5 0.0 0.0 0.0 -0.5 -0.5 -0.5 -1.01.0 -1.0stp. ind stift. 1950 + 1050 + +10 600 led 1950 arry and Stiff 1950 SHO IN SHIP. 1950 Stopind Shit 1950 STR and SHIPL STR STR 3H SHIP, 1950 sho ind shift STP at shift sno ind shift STP all shift she ind shift sub en leg STR all STIFF sub en leg Sub Edd Teg upwelling clear-sky shortwave upwelling clear-sky longwave flux at TOA - sea flux at TOA - sea 1.0 1.0 $\Delta \operatorname{rsutcs} (\operatorname{Wm} - 2)$ $\Delta$ rlutcs (W m-2) 0.5 0.5 0.0 0.0 -0.5 -0.5 -1.0-1.0+10 600 red 1050 SHP all SHIP. sho ind shift 1950 +10 600 red 1050 SHP all SHIT, Jobo and ind shift 1950 STR at Shift snp ind shift SIRP all SHIFT she ind shift sub eab ing sub 300 leg sub en leg CAM-ATRAS ■ E3SM GFDL-ESM4 NorESM2 CESM1 GEOS GISS-E2.1

# Summary - absolute difference



■ E3SM

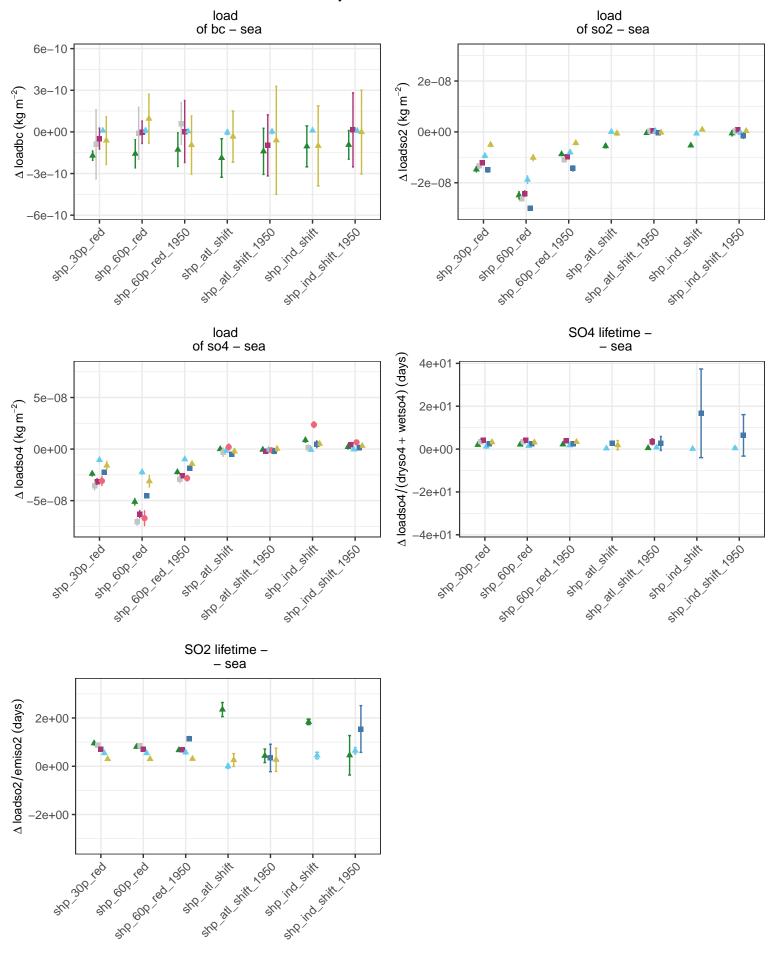
▲ GEOS

GISS-E2.1

CESM1

#### Summary - absolute difference dry deposition rate wet deposition rate total deposition rate of BC - sea of BC - sea of BC - sea 1.3e-15 6.1e-15 2.3e-15 $\Delta$ drybc + wetbc (kg m – 2 s – 1) $\Delta$ drybc (kg m<sup>-2</sup> s<sup>-1</sup>) $\Delta$ wetbc (kg m<sup>-2</sup> s<sup>-1</sup>) 6.7e-16 3.1e-15 3.8e-16 0.0e + 000.0e + 00-1.5e-15 6.7e-16 -3.1e-15 -3.4e-15 STR att Strike and strike and attended to the st Story of State of Sta Str. ind Stift, 1950 and Sall Shift, 1980 Sto ind Stift 1950 -1.3e-15 sub 300 leg -6.1e-15 ste 300 led -5.2e-15 stre 300 teg dry deposition rate wet deposition rate dry deposition rate of so2 - sea of so2 - sea of so4 - sea 4e-05 $\Delta$ dryso2 (kg m<sup>-2</sup> s<sup>-1</sup>) $\Delta$ wetso2 (kg m<sup>-2</sup> s<sup>-1</sup>) 2e-13 $\Delta$ dryso4 (kg m $^{-2}$ s $^{-1}$ 3e-2e-05 0e+00 0e+00 0e+00 -2e-05 -3e-14 2e-13 orth del drift, 1,7,7 one of all alith. SHO JIN SHIRL JOSO sir ind shift 1950 -4e-05 214 90 to 1 snP ind shift , 600 leg SIR ALL SHIFT she ind shift , 600 tog SUB TOO sing 300 teg (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3wet deposition rate total deposition rate of S - sea of so4 - sea 0.0e+00 - $\Delta$ wetso4 (kg m<sup>-2</sup> s<sup>-1</sup>) 2e-13 -5.0e-06 ω –1.0e–05 $({\sf kg}\,{\sf m}^{-2};$ 0e+00 1.5e-05 Pred Strain of S -2.0e-05 2e-13 -2.5e-05 sho ind shift Joso 311,905 544 41 9 snP ind shift CAM-ATRAS ■ E3SM GFDL-ESM4 NorESM2 CESM1 GEOS GISS-E2.1

### Summary - absolute difference



▲ CAM-ATRAS

CESM1

■ E3SM

GEOS

NorESM2

Summary - absolute difference  $\Delta$  clear – sky shortwave flux (W m $^{-2}$ ) 0.10 - $\Delta$  shortwave flux (W m $^{-2}$ )  $\Delta$  shortwave flux (W m $^{-2}$ ) 0.2 0.2 0.05 -0.0 0.00 -0.2 -0.2 **-**-0.05 **-**-7.5e-085.0e-082.5e-080.0e+002.5e-08  $\Delta$  SO4 column burden (kg m<sup>-2</sup>)  $\Delta$  SO2 column burden (kg m<sup>-2</sup>) Δ SO2 lifetime (days)  $\Delta$  SO4 column burden (kg m $^{-2}$ 0e+00 **-**30 -∆ SO2 lifetime (days) ∆ SO4 lifetime (days) -2e-08 20 -10 -0 -0 -0e+00 -7.5e-085.0e-082.5e-080.0e+002.5e-08 -3e-08 -2e-08 -1e-08 0e+00 -3e-08 -2e-08 -1e-08  $\Delta$  SO2 column burden (kg m<sup>-2</sup>  $\Delta$  SO2 column burden (kg m<sup>-2</sup>)  $\Delta$  SO4 column burden (kg m $^{-2}$ ) 2e-12 -0e+00  $\Delta$  SO2 column burden (kg m $^{-2}$  $\Delta$  net radiative flux (W  $\mathrm{m}^{-2})$ 1e-12 ·  $\Delta$  DMS (mol mol<sup>-1</sup>) -1e-08 0.2 2e-08 -0.2 **-**-2e-12 --3e-08 -2.0e-1115e-1110e-1510e-120e+00 -3e-08 -2e-08 -1e-08 0e+00  $\Delta$  SO2 (kg kg<sup>-1</sup>) Δ SO2 lifetime (days)  $\Delta$  SO2 column burden (kg m<sup>-2</sup>) CAM-ATRAS E3SM GFDL-ESM4 ► NorESM2

CESM1

**GEOS** 

→ GISS-E2.1