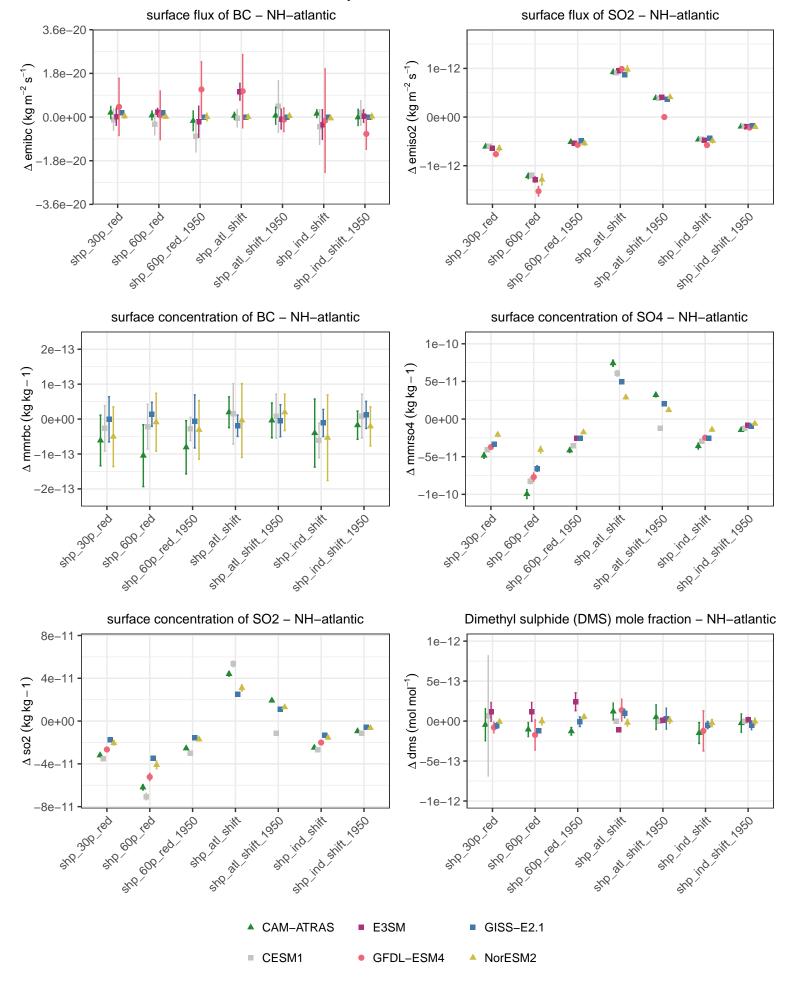
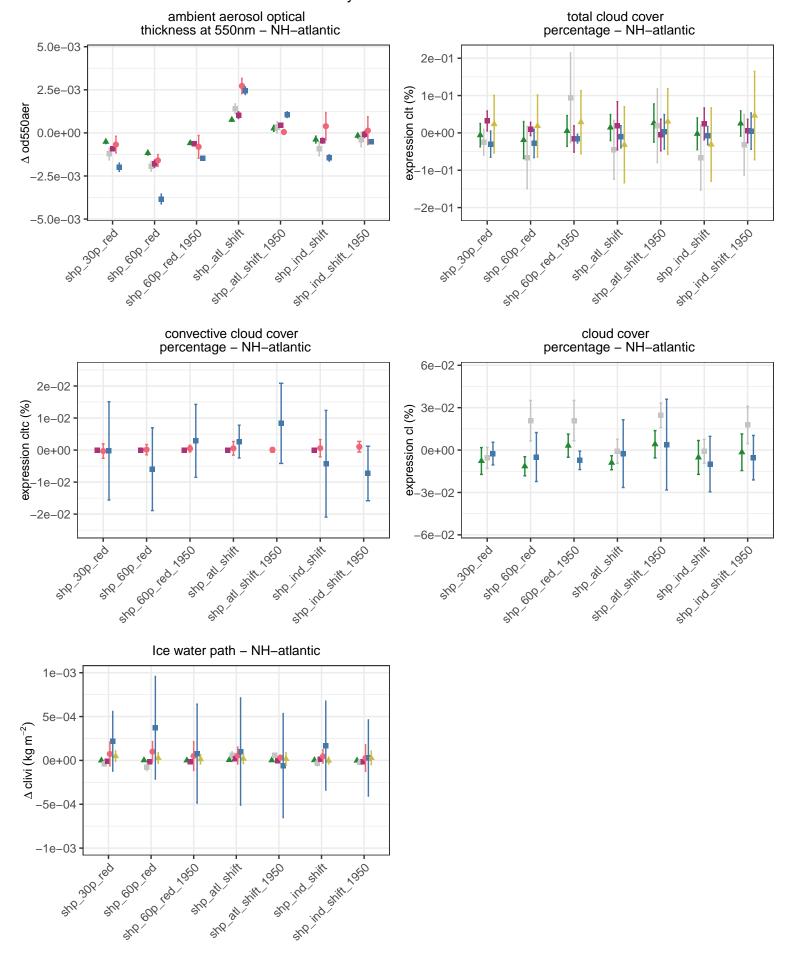
Summary – absolute difference



Summary - absolute difference upwelling longwave flux upwelling shortwave flux net radiative flux at TOA - NH-atlantic at TOA - NH-atlantic at TOA - NH-atlantic 0.50 0.2 0.2 Δ rlut + rsut (W m - 2) 0.25 Δ rlut (W m – 2) $\Delta \operatorname{rsut}(\operatorname{Wm}-2)$ 0.1 0.1 0.00 0.0 0.0 0.1 -0.1-0.25-0.2-0.2-0.50318 600 188 7950 sho ind shift 1950 \$10,600 led 1950 and anith 1950 STR 21 STIFL 250 sho all shift, Joso sho ind shift 1950 SHO all Shift Joseph sho ind shift snP at shift SNP att shift sub 300 leg sub end ing she ind shift · 608 /69 she ind shift \$10° 300° 180 , 806 leg clear-sky net radiative flux implied cloud response at TOA incident shortwave flux NH-atlantic at TOA - NH-atlantic at TOA - NH-atlantic Δ rlut + rsut - rlutcs - rsutcs (W m⁻²) Δ rlutcs + rsutcs (W m – 2) 0.2 0.2 0.2 $\Delta \operatorname{rsdt} (\operatorname{Wm} - 2)$ 0.1 0.1 0.1 0.0 0.0 0.0 -0.1 -0.1 -0.1 -0.2-0.2-0.2sho ind shift Joso SHR all SHIP. 1950 +10 600 Fed 1950 +1000 led 1950 should shift 1950 and ind shift 1950 STO all SHIP. 1950 Sto all Stift 1950 sub en lag STP at shift sno ind shift sub end ing SNP at shift she jnd shift sub end teg STR all STIFF \$10³300 teg upwelling clear-sky shortwave upwelling clear-sky longwave flux at TOA - NH-atlantic flux at TOA - NH-atlantic 0.2 0.2 $\Delta \operatorname{rsutcs} (\operatorname{Wm} - 2)$ Δ rlutcs (W m-2) 0.1 0.1 0.0 0.0 -0.1 -0.1 -0.2-0.2410 60 red 10 60 and all arith, 1989. +10 60 red 1950 and ind shift 1950 STR 20 STR. 2000 and ind shift 1950 STR at Shift snp ind shift SIRP all SHIFT she ind shift sing on teg \$10³⁰⁰ Jed sub cob leg CAM-ATRAS E3SM GISS-E2.1 CESM1 GFDL-ESM4 NorESM2

Summary - absolute difference



▲ CAM-ATRAS

CESM1

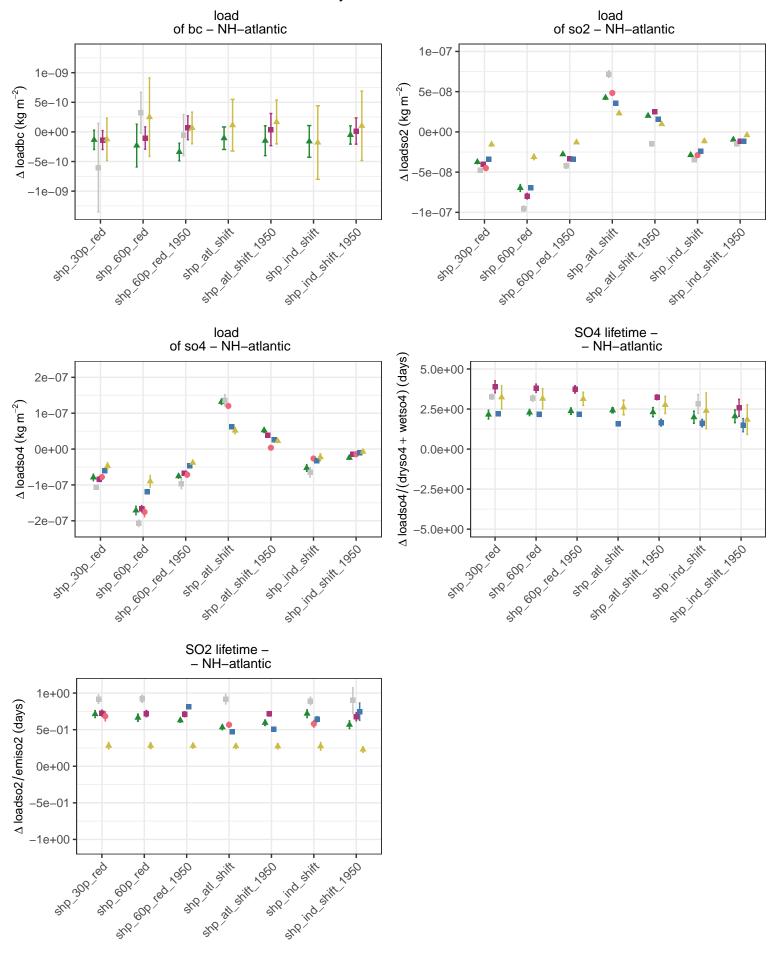
■ E3SM

• GFDL-ESM4

GISS-E2.1

Summary - absolute difference dry deposition rate wet deposition rate total deposition rate of BC - NH-atlantic of BC - NH-atlantic of BC - NH-atlantic 3.7e-16 2.4e-15 1.8e-15 Δ drybc + wetbc (kg m – 2 s – 1) Δ drybc (kg m⁻² s⁻¹) Δ wetbc (kg m⁻² s⁻¹) 1.9e-16 1.2e-15 8.3e-16 0.0e + 000.0e + 001.6e-1.2e-15 1.9e-16 -1.1e-15 STR all Strike Ind or the STR and Strike or the 314 600 181 1850 + and Sall Shift, 1980 3114 600 184 1850 ... and de distriction of sub 300 lag -3.7e-16 -2.4e-15 ste 300 teg -2.1e-15 stre 300 teg dry deposition rate wet deposition rate dry deposition rate of so4 - NH-atlantic of so2 - NH-atlantic of so2 - NH-atlantic 2e-13 1e-12 Δ dryso2 (kg m⁻² s⁻¹) Δ wetso2 (kg m⁻² s⁻¹) Δ dryso4 (kg m⁻² s⁻¹) 1e-13 1e-13 5e-13 0e+00 0e+00 0e+00 5e-13 -1e-13 -1e-13 one of Stiff, of of Stiff, of the stiff, of -1e-12 Sto of State ork off Stiff 1000 318 600 fed 1950 3.14 600 18d 1. SHO JIN SHIRL JOSO 214 90 to 1 SIR ALL SHIFT , 806 lag -2e-13 stp.ind shift sing 300 fed sub 300 leg 1800 Leg (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3total deposition rate wet deposition rate of so4 - NH-atlantic of S - NH-atlantic 8e-13 4e-13 Δ wetso4 (kg m⁻² s⁻¹) 4e-13 $(kg m^{-2} s^{-1})$ 0e+00 0e+00 4e-13 4e-13 Sto of Stiff, 1950 4 60 18d 1960 snPind shift SHO IN SHIP JOSO 314 90 Sec. 4 SHO Ind Shirt Jobo -8e-13 sing 300 teg SUB LEGA ste 300 ing -8e-13 CAM-ATRAS E3SM GISS-E2.1 CESM1 GFDL-ESM4 NorESM2

Summary - absolute difference



▲ CAM-ATRAS

CESM1

E3SM

NorESM2

Summary - absolute difference Δ clear – sky shortwave flux (W m $^{-2})$ 0.05 - Δ shortwave flux (W $\mathrm{m}^{-2})$ Δ shortwave flux (W m⁻²) 0.2 0.2 0.00 0.0 0.0 -0.05 **-**-0.2 **-**-0.2 -2e-07 -1e-07 0e+00 0e+00 -1e-07 -5e-08 0.3 0.6 0.9 Δ SO4 column burden (kg m⁻²) Δ SO2 column burden (kg m⁻²) Δ SO2 lifetime (days) Δ SO4 column burden (kg m $^{-2}$) 1e-07 **-**∆ SO4 lifetime (days) ∆ SO2 lifetime (days) 0e+00 -0.3 --2e-07 -1e-07 -5e-08 0e+00 5e-08 5e-08 -1e-07 -5e-08 0e+00 -2e-07 -1e-07 0e+00 Δ SO4 column burden (kg m⁻²) Δ SO2 column burden (kg m⁻² Δ SO2 column burden (kg m⁻²) 0.4 -8e-13 -∆ SO2 column burden (kg m⁻²) Δ net radiative flux (W m $^{-2}$) 5e-08 Δ DMS (mol mol $^{-1}$) 4e-13 • 0.2 0e+00 0.0 5e-08 -4e-13 · -0.2 -2e-07 -1e-07 0e+00 -8e-11 -4e-11 0e+00 -1e-07 -5e-08 0e+00 5e-08 Δ SO2 (kg kg⁻¹) Δ SO2 lifetime (days) Δ SO4 column burden (kg m⁻²) CAM-ATRAS E3SM GISS-E2.1

-GFDL-ESM4

NorESM2

CESM1