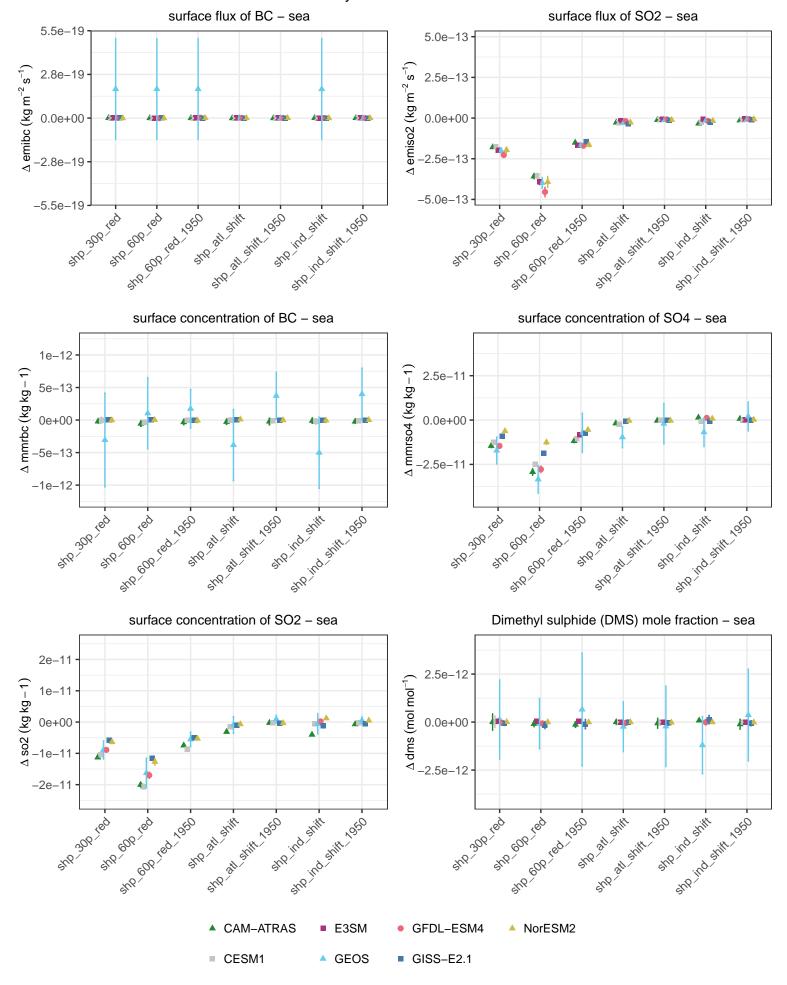
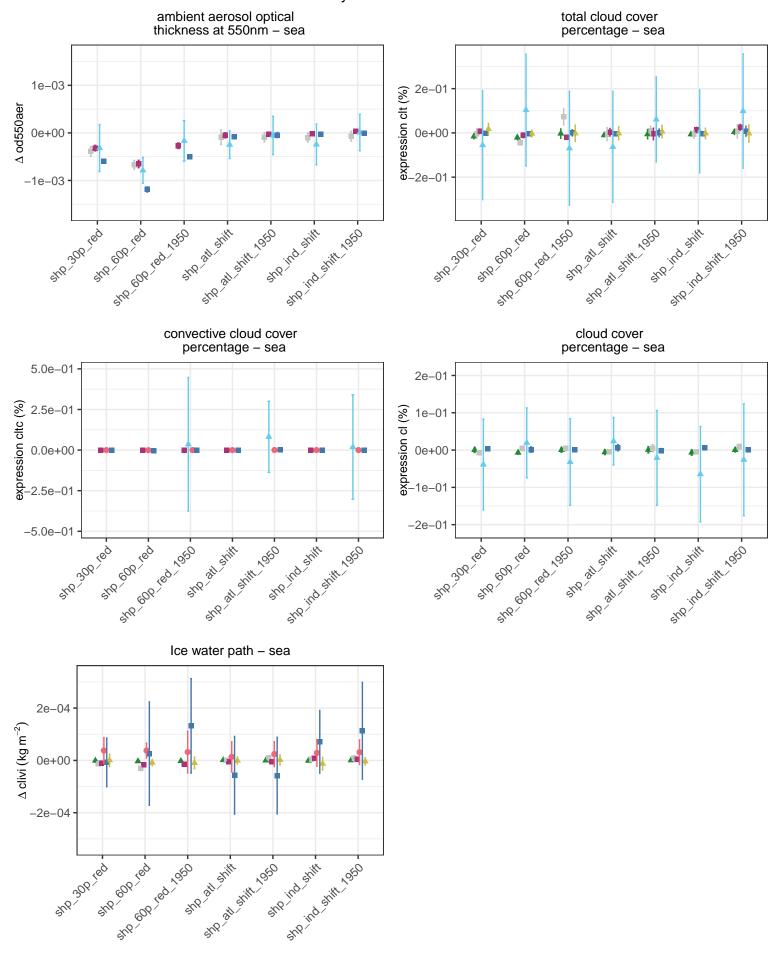
Summary - absolute difference



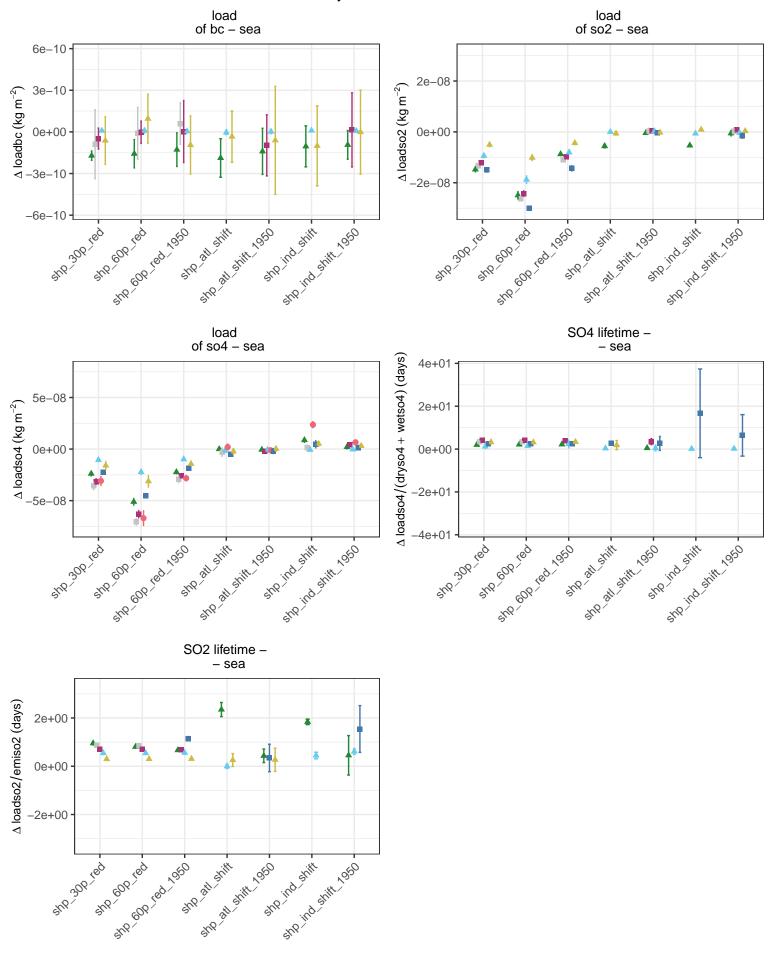
Summary - absolute difference upwelling longwave flux upwelling shortwave flux net radiative flux at TOA - sea at TOA – sea at TOA - sea 1.0 1.0 1.0 Δ rlut + rsut (W m – 2) Δ rlut (W m – 2) $\Delta \operatorname{rsut}(\operatorname{Wm}-2)$ 0.5 0.5 0.5 0.0 0.0 0.0 -0.5 0.5 -0.5-1.0-1.0-1.0sho ind shift 1950 +10 600 red 1950 ste all stift, 1950 310 600 led 1950 STR 3d SHIP. JOSO sho ind shift 1950 ste off stift, ogso snP att shift she ind shift snP att shift she ind shift sub en lag snp at shift she ind shift elb log sub en lag clear-sky net radiative flux implied cloud response at TOA incident shortwave flux at TOA - sea at TOA - sea Δ rlut + rsut - rlutcs - rsutcs (W m⁻²) Δ 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 -1.0SHR all SHIP. 1950 +1000 Fed 1050 +10 600 led 1950 SHO all SHIP. sho ind shift 1960 SHO IN SHIP. 1950 Stopind Shit 1950 STR 3H SHIP, 1950 snp ind shift STR ind Shift snP at shift STP all shift she ind shift Sub leg STR all STIFF Sub log sub en leg upwelling clear-sky shortwave upwelling clear-sky longwave flux at TOA - sea flux at TOA - sea 1.0 1.0 $\Delta \operatorname{rsutcs} (\operatorname{Wm} - 2)$ Δ 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 out ing sub 300 leg sub en leg CAM-ATRAS ■ E3SM GFDL-ESM4 NorESM2 CESM1 GEOS GISS-E2.1

Summary - absolute difference



Summary - absolute difference dry deposition rate wet deposition rate total deposition rate of BC - sea of BC - sea of BC - sea 1.4e-15 6.7e-15 3.9e-15 Δ drybc + wetbc (kg m – 2 s – Δ drybc (kg m⁻² s⁻¹) Δ wetbc (kg m⁻² s⁻¹) 6.8e-16 3.3e-15 1.6e-15 4 0.0e + 000.0e + 007.2e-16 6.8e-16 3.3e-15 -3.0e-15 STR att Strike Ind strike Str. ind Stift, 1950 21.4 90 194 1940 + 1 and Sall Shift, 1980 214 90 184 1850 + Sto ind Stift 1950 SUN SUL SUIT JOSO -1.4e-15 sub 300 leg -6.7e-15 ste 300 led -5.3e-15 stp 300 teg dry deposition rate wet deposition rate dry deposition rate of so2 - sea of so2 - sea of so4 - sea 6e-14 6e-14 Δ wetso2 (kg m⁻² s⁻¹) Δ dryso2 (kg m⁻² s⁻¹) $\Delta \, dryso4 \, (kg \, m^{-2} \, s^{-1})$ 2e-13 3e-14 3e-14 0e+00 0e+00 0e+00 ·3е--14 2e-13 SHO A SHIP LAND -6e-14 J.1600 181 1850 Stopped Stift 1960 314 900 teg 1 920 on all arity of Sto of Stiff Line 214 90 to 1 -6e-14 SHP ind shift 1950 , 600 leg sno ind shift SIR ALL SHIFT sno ind shift sing 300 fed sto 300 teg (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3total deposition rate wet deposition rate of S - sea of so4 - sea 5.0e-14 Δ wetso4 (kg m⁻² s⁻¹) 0.0e+002e-13 m^{-2} 0e+00 -1.0e-13 (kg -1.5e-13 Step Strate Stra 2e-13 -2.0e-13 sho ind shift Joso SNP and Stiff 31490 444 41 3 CAM-ATRAS ■ E3SM GFDL-ESM4 NorESM2 CESM1 GEOS GISS-E2.1

Summary - absolute difference



▲ CAM-ATRAS

CESM1

■ E3SM

GEOS

NorESM2

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

CESM1

GEOS

→ GISS-E2.1