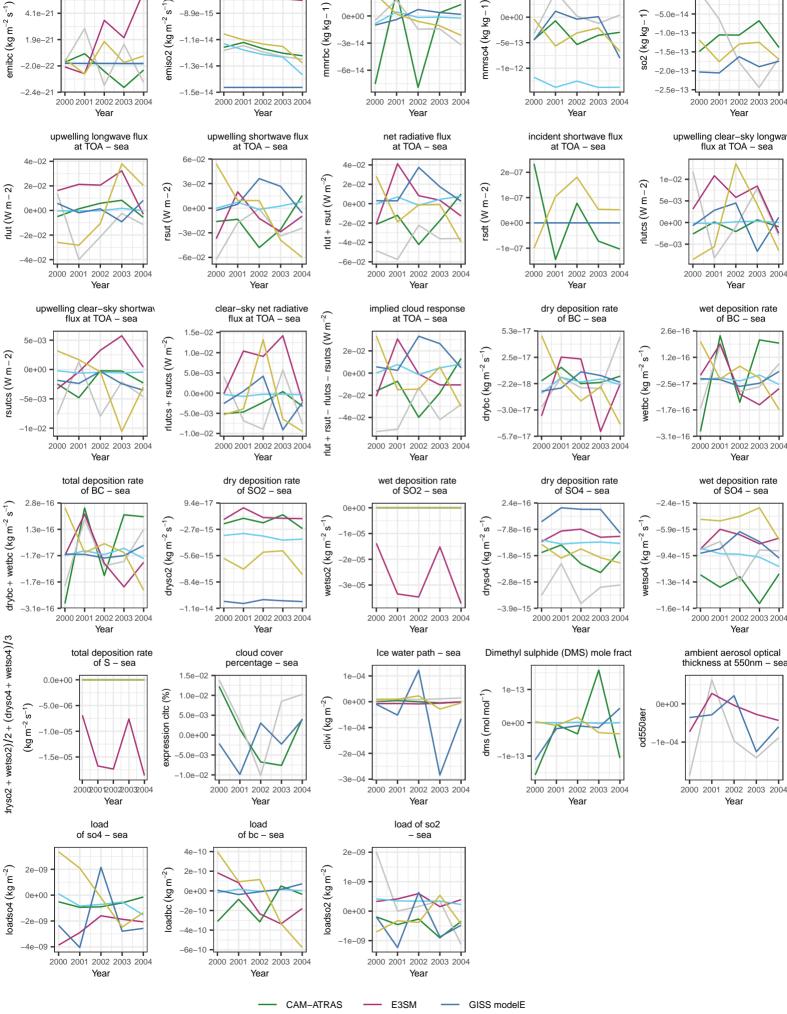
shp-atl-shift-1950: absolute difference surface flux surface concentration surface concentration of SO4 – sea surface concentration of SO2 – sea -6.9e-15 0.0e+00 mmrso4 (kg kg-1) nmrbc (kg kg-1) 0e+00(kg kg-_3e_14 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year upwelling shortwave flux at TOA – sea net radiative flux at TOA – sea upwelling clear-sky longwav flux at TOA - sea incident shortwave flux at TOA – sea $rsut (W m^{-2})$ rlutcs (W m-2) sdt (W m-2) 0e+00 0e+00 -2e-02 0e+00 0e+00 -3e-02-5e-03 -1e-072000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 Year Year Year Year clear-sky net radiative flux at TOA - sea implied cloud response at TOA – sea dry deposition rate of BC – sea wet deposition rate of BC – sea rsutcs (W m^{-2}) 2 6e-16 1.0e-02 vetbc (kg m⁻² s⁻ drybc (kg m⁻² s⁻ 5.0e-03 rlutcs -0.0e+00 -2e-02 -5.0e-03 rsut--4e_02 rlut + 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year dry deposition rate of SO2 – sea wet deposition rate of SO2 – sea dry deposition rate of SO4 – sea wet deposition rate of SO4 – sea 9 4e-17 2 4e-16 -2 4e-15 wetso2 (kg m⁻² s⁻¹. wetso4 $(kg m^{-2} s^{-1}$ dryso4 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ -1e-05 -9.4e-15 _2e_05 -8.4e-15 -2 8e-15 -3e-05 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year cloud cover Ice water path - sea Dimethyl sulphide (DMS) mole fract ambient aerosol optical thickness at 550nm – sea percentage - sea 1.5e_02 dms (mol mol⁻¹ clivi (kg m⁻²) 0e+00 0e+00 5.0e-03 od550aeı 0e+00 -1e-04 0.0e+00-2e-04 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year load load of so2 of bc - sea sea 4e-10



CESM1

GEOS

NorESM2

surface flux of BC – sea

6.3e-21