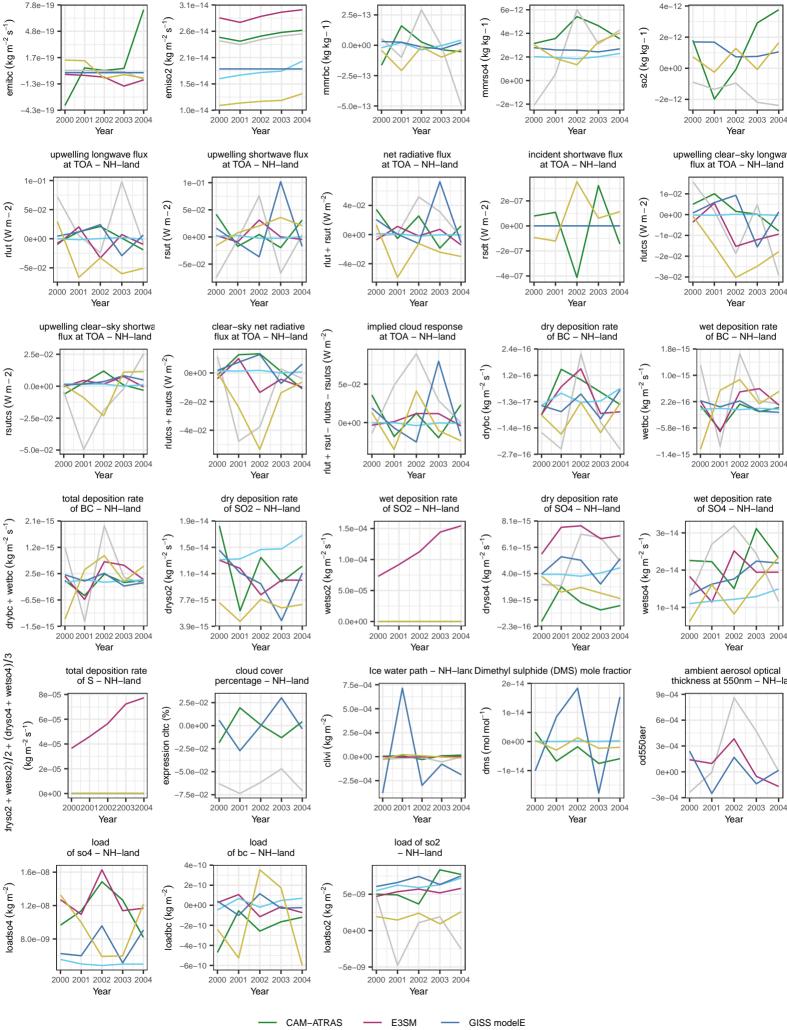
shp-atl-shift-1950: absolute difference surface flux of SO2 – NH–land surface concentration surface concentration of SO4 – NH–land surface concentration of SO2 – NH–land 3.1e-14 2.5e-13 mmrso4 (kg kg – 1) nmrbc (kg kg-1) 2 6e-14 so2 (kg kg – 1) 0.0e+0.02e-12 0e+00 -2 5e-13 0e+00 _5 0e_13 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year upwelling shortwave flux at TOA – NH–land net radiative flux at TOA – NH–land incident shortwave flux at TOA – NH–land upwelling clear-sky longwav flux at TOA - NH-land $rsut (W m^{-2})$ rlutcs (W m-2) sdt (Wm-2)5e-02 0e+00 0e+00 rlut + -4e-02 -3e-02 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year clear-sky net radiative flux at TOA - NH-land implied cloud response at TOA – NH–land dry deposition rate of BC – NH–land wet deposition rate of BC – NH–land rsutcs $(W m^{-2})$ 2 4e-16 1 8e-15 wetbc (kg $\,\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ 1.0e-15 drybc (kg m⁻² s⁻ rlutcs --2e-02 0e+00 -4e-02 rsut-2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year dry deposition rate of SO2 – NH-land wet deposition rate of SO2 - NH-land dry deposition rate of SO4 – NH-land wet deposition rate of SO4 - NH-land 1 9e-14 8 1e-15 1.5e-04 wetso2 $(kg m^{-2} s^{-1})$ dryso4 (kg m $^{-2}$ s $^{-1}$) wetso4 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ 4.0e-15 5.0e-05 1.9e-15 0.0e + 0.0e +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 - NH-lanc Dimethyl sulphide (DMS) mole fraction ambient aerosol optical thickness at 550nm - NH-la percentage - NH-land 2e-14 7.5e-04 2.5e-02 clivi (kg m⁻²) _lom lom) smb 6e-04 0.0e+000e+003e-04 -2.5e-02 0.0e + 0.0e +-5.0e-02 0e+00 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 of so2 load - NH-land of bc - NH-land 4e-10 2e-10 0e+00



CESM1

GEOS

NorESM2

surface flux of BC – NH–land