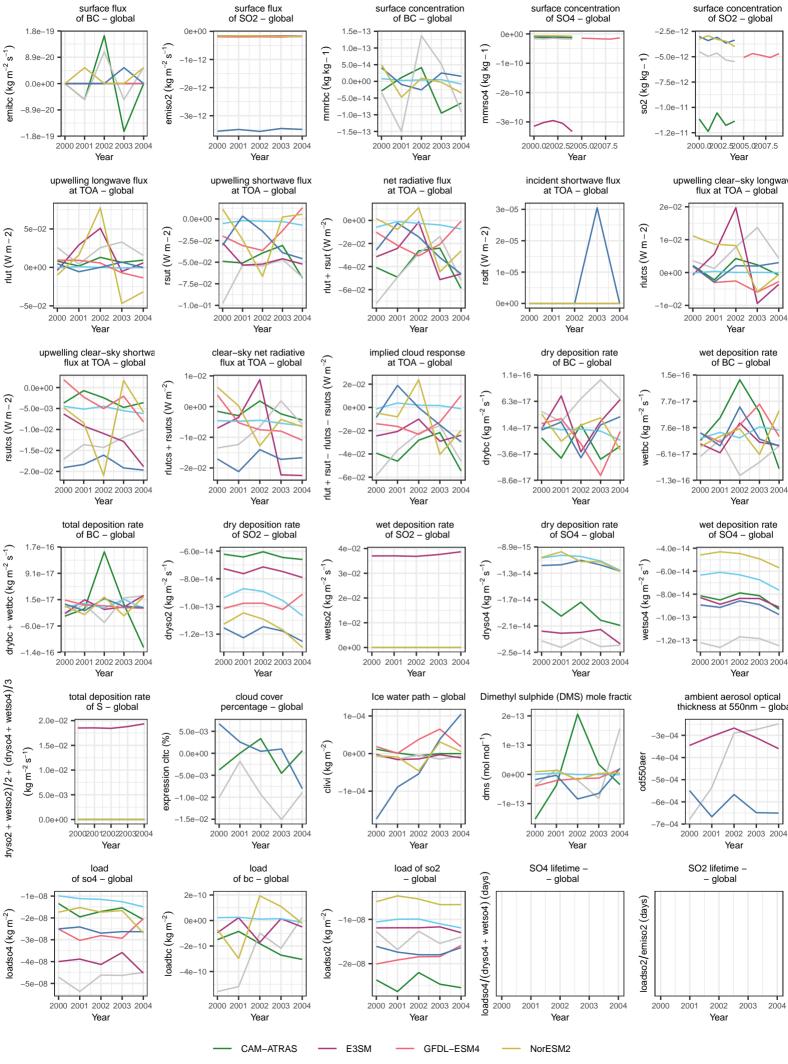
shp-30p-red: absolute difference surface flux of SO2 – global surface concentration surface concentration surface concentration of SO4 – global of SO2 – global globa _2 5e_12 mmrso4 (kg kg – 1) -5 0e-12 nmrbc (kg kg-(kg kg--5.0e-14 302 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000.02002.52005.02007.5 2000.02002.52005.02007.5 Year Year Year Year upwelling shortwave flux at TOA – global net radiative flux at TOA – global incident shortwave flux at TOA – global upwelling clear-sky longway flux at TOA - global 0e+00 $rsut (W m^{-2})$ rsdt (Wm-2)rlutcs (W m-2e-05 1e-02 -2e-02 -4e-02 0e+00 + In -6e-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 implied cloud response at TOA – global clear-sky net radiative flux at TOA - global dry deposition rate of BC – global wet deposition rate of BC – global rsutcs $(W m^{-2})$ 1.5e-16 2e-02 vetbc (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ drybc (kg m⁻² s⁻ 0e+00 rlutcs -2e-02 -4e-02 rsut r H H 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 SO4 – global wet deposition rate of SO4 – global dry deposition rate of SO2 – global wet deposition rate of SO2 – global 4e-02 _8 9e_15 wetso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ wetso4 $(kg m^{-2} s^{-1}$ $(kg m^{-2} s^{-1}$ 3e-02 -8.0e-14 2e-02 dryso4 -1.0e-13 1e-02 -2 1e-14 0e+002000 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 Dimethyl sulphide (DMS) mole fraction Ice water path - global ambient aerosol optical thickness at 550nm – globa percentage - global 1e-04 clivi (kg m^{-2}) _lom lom) smb 1e-13 0e+00 0e+00 -1e-04 -6e-04 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year SO4 lifetime SO₂ lifetime load load of so2 – global – global of bc - global global wetso4) (days



CESM1

GEOS

GISS modelE