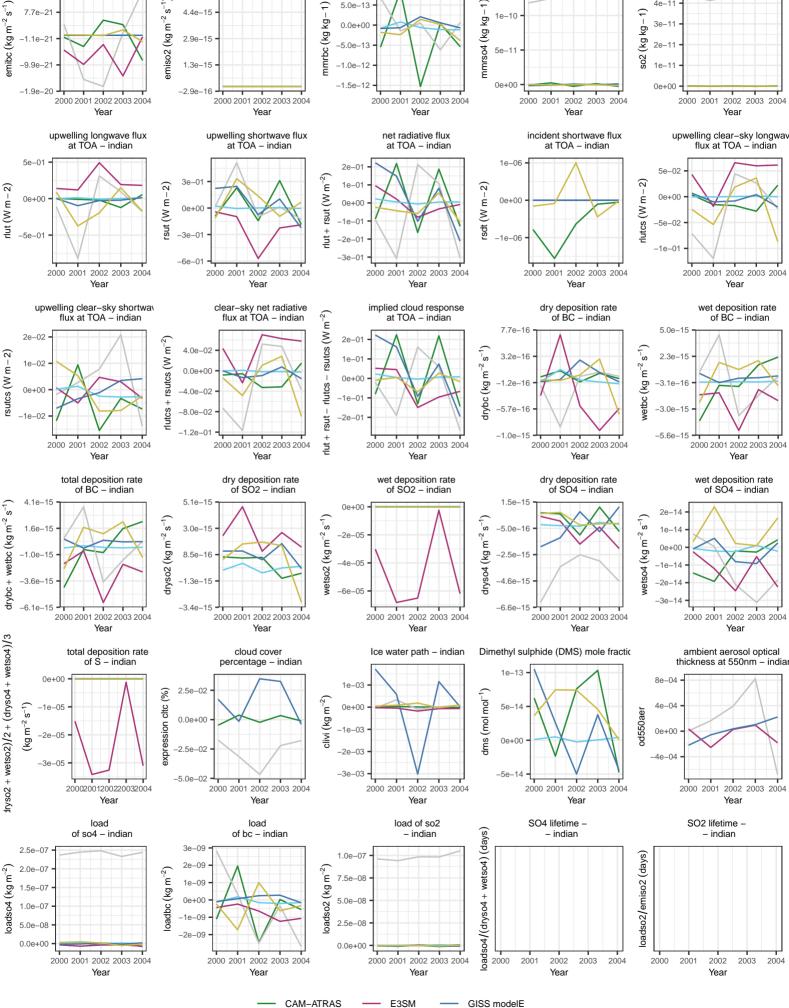
## shp-atl-shift-1950: absolute difference surface flux surface concentration surface concentration surface concentration of SO4 – indian of SO2 – indian 6.0e-15 mmrso4 (kg kg-1) 4 40-15 (kg kg - 1)nmrbc (kg kg-2.9e-15 -5.0e-13 1.3e-15 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year upwelling shortwave flux at TOA – indian incident shortwave flux at TOA – indian upwelling clear-sky longway flux at TOA – indian net radiative flux at TOA – indian $rsut (W m^{-2})$ 1e-01 rlutcs (W m-2) rsdt (W m-2) 0e+00 -1e-01 -2e-0 -1e-01 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year clear-sky net radiative flux at TOA - indian implied cloud response dry deposition rate of BC – indian wet deposition rate of BC – indian $' m^{-2}$ ) at TOA - indian 5 0e-15 rsutcs (W vetbc (kg m $^{-2}$ s $^{-1}$ 3.2e-16 2.3e-15 drybc (kg m<sup>-2</sup> s<sup>-</sup> 1e-01 0.0e+00 0e+00 rlutcs --1e-01 -8.0e-02 rsut--2e-01 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 – indian wet deposition rate of SO2 – indian dry deposition rate of SO4 – indian wet deposition rate of SO4 – indian 5 1e-15 1.5e-15 wetso2 (kg $m^{-2}$ s<sup>-1</sup>. dryso4 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ vetso4 (kg m $^{-2}$ s $^{-1}$ 3.0e-15 0e+00 8.5e-16 -1 3e-15 -6e-05 -6.6e 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 - indian Dimethyl sulphide (DMS) mole fractic ambient aerosol optical thickness at 550nm – india - indian percentage 8e-04 1e-03 dms (mol mol<sup>-</sup> clivi (kg $m^{-2}$ ) 0e+00 0.0e+00 -1e-03 0e+00 0e+00 -2 5e-02 -2e-03 -4e-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 of so2 SO4 lifetime SO<sub>2</sub> lifetime load of bc - indian indian indian - indian wetso4) (days 3e-09 2e-09 1e-09



F3SM

**GEOS** 

CESM1

GISS modelE

NorESM2

surface flux of BC – indian

1.7e-20