shp-ind-shift-1950: absolute difference surface flux of SO2 – indian surface flux of BC – indian surface concentration surface concentration of SO4 – indian surface concentration of SO2 – indian 1.3e-20 mmrso4 (kg kg – 1) emibc $(kg m^{-2} s^{-1})$ nmrbc (kg kg-1) əmiso2 (kg m $^{-2}$ s $^{-}$ 5.3e-2° so2 (kg kg – 1) 1.6e-12 -2.0e-2 0e+00-9.2e-21 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year Year upwelling longwave flux at TOA – indian 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 4e-01 $rsut (W m^{-2})$ 0e+00 rlutcs (W m-2) 5e-02 rlut (Wm-2)rsut (W m-2) rsdt (Wm-2)5.0e-01 2e-01 -6e-01 -1e-01 0.0e + 002000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year upwelling clear-sky shortwar flux at TOA – indian clear-sky net radiative flux at TOA - indian implied cloud response dry deposition rate of BC – indian wet deposition rate of BC – indian rlutcs - rsutcs (W m⁻²) at TOA – indian 8 6e-16 1.2e-01 rlutcs + rsutcs (W m⁻²) wetbc $(kg m^{-2} s^{-1})$ sutcs (W m-2) drybc (kg m^{-2} s $^-$ 1.0e-01 1e-14 5e-02 7.5e-02 0e+00 0e+00 0e+00 5.0e-02 rsut--5e-02 rlut + 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year total deposition rate of BC – indian dry deposition rate of SO2 – indian wet deposition rate of SO2 – indian dry deposition rate of SO4 – indian wet deposition rate of SO4 – indian 1.2e-12 $drybc + wetbc (kg m^{-2} s^{-1})$ wetso4 (kg m⁻² s⁻¹) dryso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ wetso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ dryso4 (kg m $^{-2}$ s $^{-1}$ 1e-14 1.3e-13 2e-03 0e+00 1.0e-13 1e-03 0e+005 0e-14 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year Year dyso2 + wetso2)/2 + (dyso4 + wetso4)/3cloud cover total deposition rate of S – indian Ice water path - indian Dimethyl sulphide (DMS) mole fractio ambient aerosol optical thickness at 550nm – indiar percentage - indian 1e-03 2.0e-03 4e-03 2e-02 dms (mol mol⁻¹ clivi $(kg m^{-2})$ $m^{-2} s^{-1}$ 양 3e-03 0e+00 1.0e-03 2e-03 (kg 0e+00 5.0e-04 -1e-03 1e-03 0.0e + 0.0e +20002001200220032004 2002 2003 2004 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2000 2001 2002 Year Year Year Year Year load of so2 SO4 lifetime SO₂ lifetime load load of so4 - indian of bc - indian - indian - indian - indian wetso4) (days 3e-09 loadso2/emiso2 (days) 1e-07 2.5e-07 2e-09 loadso4 (kg m⁻²) loadso2 (kg m⁻²) oadbc (kg m⁻²) 1e-09 2.0e-07 8e-08 (dryso4 1.5e-07 7e-08 -1e-09 1.0e-07 -2e-09 5e-08 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2002 2003 2004 2001 2002 2003 2004 2000 2001 2002 2003 Year Year Year Year Year CAM-ATRAS F3SM GISS modelE CESM1 **GEOS** NorESM2