global: absolute difference surface flux surface flux surface concentration surface concentration surface concentration of BC - bc-no-season of SO2 - bc-no-season of SO4 - bc-no-season of SO2 - bc-no-season 9.3e-16 0e+00 $\mathrm{emibc}\,(\mathrm{kg}\,\mathrm{m}^{-2}\,\mathrm{s}^{-1})$ mmrbc (kg kg – 1) əmiso2 (kg m⁻² s⁻¹ kg-1mmrso4 (kg kg-20_14 6.4e so2 (kg -3 7e-16 0e+00 -8.1e-16 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 shortwave flux at TOA – bc–no–season upwelling longwave flux at TOA – bc–no–season upwelling clear-sky longwa flux at TOA - bc-no-seas net radiative flux incident shortwave flux at TOA - bc-no-season at TOA - bc-no-season 2e-01 5e-02 2.5e-02 2e-01 rlut + rsut $(W m^{-2})$ rlutcs (W m-2) rlut(Wm-2)rsut (Wm-2)rsdt (Wm-2)0e+00 0.0e + 000e+000e+00 -2.5e-02 -2e-0 -2e-01 -1e-07 -4e-01 -4e-01 -1e-01 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 upwelling clear–sky shortwav flux at TOA – bc–no–seaso clear-sky net radiative flux at TOA - bc-no-seaso implied cloud response dry deposition rate wet deposition rate at TOA - bc-no-season of BC - bc-no-season of BC - bc-no-seasor rlutcs – rsutcs (W m^{-2}) 2e-01 rlutcs + rsutcs (W m⁻²) 2e-01 0e+00 1e-01 drybc (kg $m^{-2} s^{-1}$) wetbc $(kg m^{-2} s^{-1})$ rsutcs (W m-2) 1e-01 0e+00 -1e-01 0e+00 -1e-01 + rsut --1e-01 -3.0e-15 -2e-01 -2e-01 큳 -6.0e-15 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 dry deposition rate of SO2 – bc–no–season dry deposition rate of SO4 – bc–no–season wet deposition rate of SO4 – bc–no–season total deposition rate wet deposition rate of BC - bc-no-season of SO2 - bc-no-seasor 1.2e-15 5.6e-15 $drybc + wetbc (kg m^{-2} s^{-1})$ 2.0e-13 -1.6e wetso2 (kg m^{-2} s⁻¹ dryso4 (kg m⁻² s⁻¹ dryso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ wetso4 $(kg m^{-2} s^{-1}$ 1.5e-13 1.0e-13 5.0e-14 0.0e+0.00e+00 -9.9e-15 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 total deposition rate of S – bc–no–seasor ambient aerosol optical total cloud cover percentage – bc-no-seaso convective cloud cover percentage – bc–no–season (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3thickness at 550nm - bc-no-se 1.0e-13 0.0e+00 0.0e+00 ression(clt~(%) 0e+00 $(kg m^{-2} s^{-1})$ -5 0e-02 -5e-02 2.5e-14 0.0e+00 20002001200220032004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year CAM-ATRAS E3SM GISS modelE OsloCTM3

CESM

CESM2

GEOS

GFDL-ESM4

MIROC-SPRINTARS

NorESM2

UKESM1