global: absolute difference surface flux of SO2 – bc–no–season surface concentration of BC – bc–no–season surface concentration of SO4 – bc–no–season surface flux of BC – bc–no–season surface concentration of SO2 – bc–no–season 0.0e+00 6e+00 emibc (kg m-2 s-1) 1e-01 emibc (kg m-2 s-1) mmrso4 (kg kg-1) nmrbc (kg kg-1) 4e+00 so2 (kg kg-1) 1.0e-01 -5.0e+01 0e+00 2e+00 _7 5e+01 -1e-01 00+00 0.0e+00 2003 2002 2003 2001 2003 2001 2002 2002 2003 2004 2001 2003 2002 2001 2001 Year Year Year Year Year upwelling longwave flux at TOA – bc-no-season upwelling shortwave flux at TOA – bc–no–season incident shortwave flux at TOA – bc–no–season upwelling clear-sky longwav flux at TOA - bc-no-seaso net radiative flux at TOA - bc-no-season 1e-01 rlut + rsut (W m-2) 2.5e-02 0e+00 0e+00 1.5e-08 lutcs (W m-2) rlut (W m-2) rsut (W m-2) 1e-02 rsdt (W 1.0e-08 -1e-01 -1e-01 0e+00 0.0e+00 -2e-01 -1e-02 0.0e+00 -2.5e-02 2003 2002 2003 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2001 Year Year Year Year Year upwelling clear–sky shortwav flux at TOA – bc–no–seaso clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - bc-no-season at TOA - bc-no-season of BC - bc-no-season of BC - bc-no-season 0e+00 rlut+rsut-rlutcs-rsutcs(W~m/ m-2wetbc (kg m-2 s-1) 0e+00 0e+00 drybc (kg m-2 s-1) rsutcs (W m-2) -1e+00 0e+00 ·lutcs + rsutcs (W 1e-01 -1e+00 -2e-0 _2e_01 -2e+00 0e+00 -4e-01 _3e+00 2001 2003 2004 2001 2002 2003 2004 2001 2002 2003 2001 2003 2001 2002 2003 Year Year Year Year Year dry deposition rate of SO2 – bc–no–season total deposition rate wet deposition rate dry deposition rate wet deposition rate of BC - bc-no-season of SO2 - bc-no-season of SO4 - bc-no-season of SO4 - bc-no-season 1e-01 3e+00drybc + wetbc (kg m-2 s-1) 2.5e-01 wetso2 (kg m-2 s-1) dryso2 (kg m-2 s-1) wetso4 (kg m-2 s-1) -2e+00 5e-02 2e+00 dryso4 (kg m-2 0.0e + 000e+00 -4e+00 1e+00 -2.5e-01 2e+00 -5e-02 -5.0e-01 0e+00 2002 2003 2001 2003 2001 2003 2001 2003 2003 Year Year Year Year (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3 (kg m-2 s-1) total deposition rate of S – bc–no–season ambient aerosol optical total cloud cover convective cloud cover percentage – bc-no-seaso percentage - bc-no-season 3e+00 0e+00 1e-01 -2e+012e+00 clt (%) 0e+00 -4e+01 1e+00 -1e-01 -1e-01 -6e+01 -2e-0 0e+00 2003 2002 2003 2002 2003 2003 Year Year Year Year **UKESM** CESM1 GISS MIROC **GFDI** E3SM CESM2 NorESM2 OsloCTM3 **GEOS**