global: absolute difference surface flux surface flux surface concentration surface concentration surface concentration of BC - so2-no-season of SO2 - so2-no-season of BC - so2-no-seasor of SO4 - so2-no-season of SO2 - so2-no-seaso 0.0e+00 $\mathrm{emibc}\,(\mathrm{kg}\,\mathrm{m}^{-2}\,\mathrm{s}^{-1})$ 9 miso2 (kg m $^{-2}$ s $^{-1}$) mmrso4 (kg kg-1) mmrbc (kg kg-1) $\frac{kg-1}{}$ 0e+00 1e-14 (kg so₂ (0e+00 0.0e+00 -1.5e-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 longwave flux at TOA – so2–no–season upwelling shortwave flux at TOA – so2–no–season incident shortwave flux upwelling clear-sky longwa flux at TOA - so2-no-seas net radiative flux at TOA - so2-no-season at TOA - so2-no-season 0e+00 2.5e-02 1e-07 5e-02 $' m^{-2}$) rlut (W m-2) rsut (Wm-2)rsdt (Wm-2)0.0e+00 rlutcs (W mrsut (W -2e-01 0e+00 -2e-01 -2.5e-02 -3e-010e+00 -5e-02 -5.0e-02 -4e-01 -4e-01 -5e-08 _5e_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 shortwa flux at TOA - so2-no-seas clear-sky net radiative flux at TOA - so2-no-sease implied cloud response at TOA – so2–no–season dry deposition rate of BC – so2–no–season wet deposition rate of BC - so2-no-seasor rsutcs (W m⁻²) 0.0e+00rlutcs + rsutcs (W m⁻²) -5.0e-02 1.6e-16 wetbc $(kg m^{-2} s^{-1})$ drybc (kg m $^{-2}$ s $^{-1}$) rsutcs (W m-2) -5 0e-02 -1e-01 -1.0e-01 1.0e-16 rlutcs . -1.0e-01 -1.5e-01 -2e-01 -6.8e-18 rsut -2.0e-0° 큳 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 SO4 – so2–no–seaso total deposition rate dry deposition rate wet deposition rate wet deposition rate of BC - so2-no-season of SO2 - so2-no-season of SO2 - so2-no-season 4.5e-16 $drybc + wetbc (kg m^{-2} s^{-1})$ 2.0e 0e+00 1.0e-14 dryso4 (kg m⁻² s⁻¹ vetso2 (kg m^{-2} s⁻¹ dryso2 (kg m $^{-2}$ s $^{-1}$ wetso4 (kg m⁻² 5.0e-15 -2e-14 0.0e+00 -2.9e-16 3e-14 -5.0e-15 -5.3e-16 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 total deposition rate ambient aerosol optical total cloud cover convective cloud cover (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3of S - so2-no-seasc thickness at 550nm - so2-no-s percentage - so2-no-seaso percentage - so2-no-season 0.0e + 001.5e-14 expression(clt~(%) $(kg m^{-2} s^{-1})$ 2.5e-03 0e+00 5.0e-15 -5.0e-02 -5.0e-15 -7.5e-02 -1e-01 -5.0e-03 200@001200220032004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year

