Reference - absolute land averages surface concentration of BC – land surface flux of BC - land surface flux of SO2 - land surface concentration surface concentration of SO4 - land of SO2 - land 3.0e-10 1.4e-09 1.4e-12 emibc (kg m^{-2} s⁻¹) emiso2 $(kg m^{-2} s^{-1})$ 1.75e-11 mmrso4 (kg kg mmrbc (kg kg $m so2~(kg~kg^{-1}$ 2.0e-09 1.2e-09 1.2e-12 2 0e-10 1.50e-1 1.0e-09 8.0e-13 2000 2001 2002 2003 2004 2001 2002 2003 2004 2002 2003 2004 Year Year Year Year Year clear-sky longwave flux at TOA - land longwave flux at TOA - land shortwave flux at TOA - land net radiative flux at TOA - lan incident shortwave flux at TOA - land 327.1 -345 -232 $rlut + rsut (W m^{-2})$ 326.9 $rlut (W m^{-2})$ $rsut (W m^{-2})$ rlutcs (W m⁻²) $rsdt (W m^{-2})$ -350 326.7 -234 -120 -355 326.5 2000 2001 2002 2003 2004 2002 2003 2004 2002 2003 2004 2003 2004 Year Year Year clear-sky shortwave flux at TOA - land clear-sky net radiative flux at TOA – land implied cloud response at TOA – land dry deposition rate of BC – land wet deposition rate of BC – land rlutcs - rsutcs (W m⁻²) rlutcs + rsutcs (W m⁻²) $drybc (kg m^{-2} s^{-1})$ wetbc $(kg m^{-2} s^{-1})$ rsutcs $(W m^{-2})$ -321 _70 -30 -322 rlut + rsut --35 -323 2003 2004 2002 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2000 2001 2002 2000 2001 2003 2004 2000 2001 2000 2001 Year Year Year Year Year dry deposition rate of SO4 – land total deposition rate of BC – land dry deposition rate wet deposition rate wet deposition rate of SO2 – land of SO2 - land of SO4 – land 3.274688e-15 $drybc + wetbc (kg m^{-2} s^{-1})$ wetso4 $(kg m^{-2} s^{-1}$ dryso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ wetso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ $dryso4 (kg m^{-2} s^{-1}$ 1.2e-1 1 8e-12 2.548147e-15 1.821606e 2000 2001 2002 2003 2004 2002 2003 2004 20002001200220032004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year total deposition rate (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3 $(kg m^{-2} s^{-1})$ 20002001200220032004

Year