so2-no-season: absolute difference surface flux of SO2 – NH–land surface concentration of SO4 – NH–land surface flux of BC – NH–land surface concentration surface concentration of SO2 – NH–land 1.5e-13 mmrso4 (kg kg-1) mmrbc (kg kg-1) 1 0e-13 so2 (kg kg-1) (kg m-2 5.0e-14 emiso₂ (0.0e+00 0e+00 -1.5e-10 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year upwelling clear–sky longwave flux at TOA – NH–land upwelling shortwave flux at TOA – NH–land net radiative flux at TOA – NH–land incident shortwave flux at TOA – NH–land 0.15 0.15 0.02 rlut + rsut (W m-2) 1e-07 0.00 0.10 rlutcs (W m-2) sut (W m-2) .sdt (W m-2) -0.02 0.05 0.05 -0.04 0.00 -0.06 2001 2003 2001 2003 2001 2002 2003 2003 Year Year Year Year dry deposition rate of BC – NH–land wet deposition rate of BC – NH–land total deposition rate of BC – NH–land clear-sky net radiative flux at TOA - NH-land 3.7e-15 3.7e-15 1.1e-15 0.100 drybc + wetbc (kg m-2 s-1) rlutcs + rsutcs (W m-2) 0.075 drybc (kg m-2 s-1) wetbc (kg m-2 s-1) 6.9e-16 1.8e-15 0.050 3.0e-16 -8.6e-17 0.025 0.000 2001 2002 2003 2001 2003 2001 2003 2001 2002 2003 Year Year Year Year wetso4)/3 (kg m-2 s-1) dry deposition rate of SO4 – NH–land wet deposition rate of SO4 – NH–land total deposition rate of S – NH–land wet deposition rate of SO2 - NH-land 2.0e-13 wetso2 (kg m-2 s-1) wetso4 (kg m-2 s-1) dryso4 (kg m-2 s-1 0e+00 + (dryso4 2e-13 5.0e (dryso2 + wetso2)/2 0.0e+00 0.0e+00 2004 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 Year Year Year total cloud cover convective cloud cover percentage - NH-land 0.0025 0.05 0.0000 %

