## bc-no-season: percent difference surface flux surface flux surface concentration surface concentration of BC - NH-land of SO2 - NH-land of BC - NH-land of SO4 - NH-land of SO2 - NH-land 4e-01 8e+00 0.0e + 0086-03 0e+00 3e\_01 -2.5e+01 6e-03 mmrso4 2e-01 4e+00 -5.0e+01 4e-03 1e-01 2e+00 0e+00 -3e+00 0e+00 -1e-01 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 Year Year upwelling longwave flux at TOA – NH–land upwelling shortwave flux at TOA – NH–land incident shortwave flux at TOA – NH-land upwelling clear-sky longway flux at TOA - NH-land net radiative flux at TOA - NH-land 1e-07 5e-01 1 0e-01 rsut 0e+00 0e+00 rsut ∆ rlut + 5.0e-02 \_5e\_01 -5e-01 -1e-07 0.00+00 -1e+00 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2000 2001 Year Year Year Year Year dry deposition rate of BC – NH–land wet deposition rate of BC – NH–land clear-sky net radiative implied cloud response flux at TOA - NH-land at TOA - NH-land rsutcs) 1e+00 6e+00 rsutcs 0e+00 5.0e-01 ∆ rlutcs + 2e+00 \_1e+00 rsut 0.0e+00 0e+002000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 total deposition rate of BC – NH–land dry deposition rate of SO4 – NH–land wet deposition rate of SO4 – NH–land dry deposition rate wet deposition rate of SO2 - NH-land of SO2 - NH-land 4e+00 0e+00wetso4 ∆ dryso2 ∆ wetso2 2e+00 0e+00 2e+00 0e+00 0e+00 -2e+00 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 total deposition rate ambient aerosol optical total cloud cover - NH-lan convective cloud cover - NH-Ia surface cloud cover - NH-la of S - NH-land thickness at 550nm - NH-lai 3e-01 0.0e+00-2.5e+00 ∆ od550ae -2e+010.0e+00 ㅎ -5.0e+00 -4e+01 -2.5e-01 -6e-01 -6e+01 -9e-01 20002001200220032004 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 ice water path - NH-land surface concentration column mass burden column mass burden column mass burden of SO2 - NH-land of DMS - NH-land of BC - NH-land of SO4 - NH-land 2e+00 1.2e+01 2.0e+00 4e-01 1.5e+00 8.0e+00 0e+00 1.0e+00

