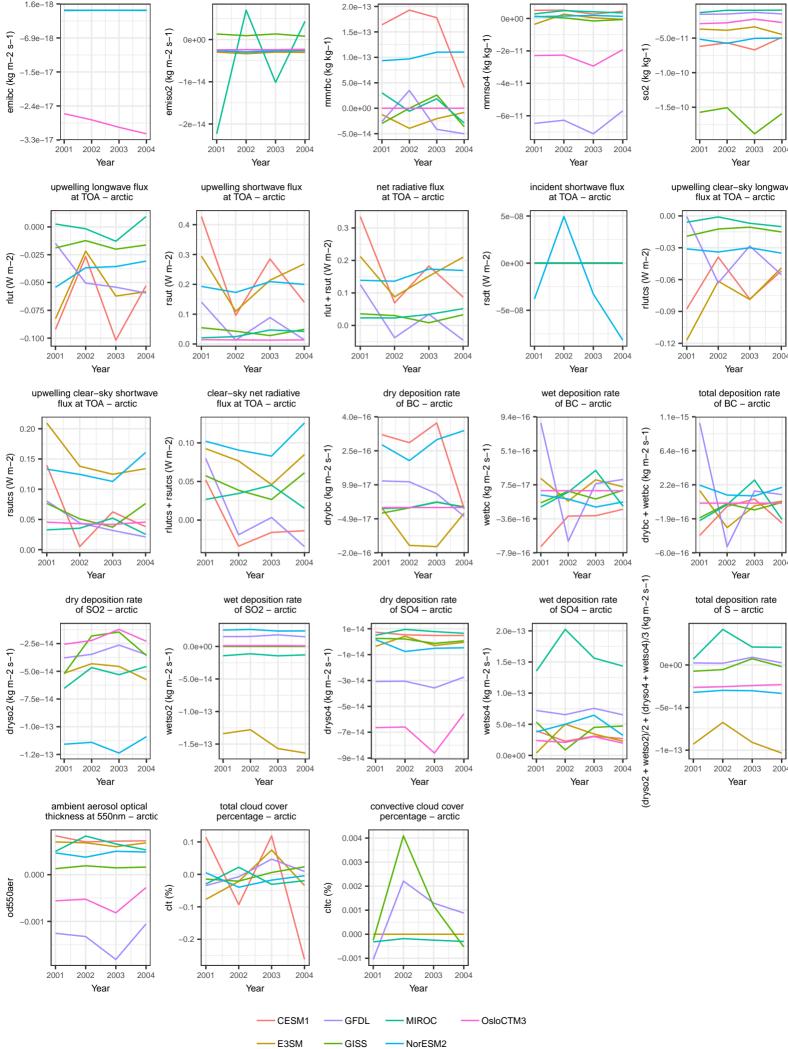
## so2-no-season: absolute difference surface flux of SO2 – arctic surface concentration of SO4 – arctic surface concentration of SO2 – arctic surface concentration 2.0e-13 0e+00 1.5e-13 0e+00 mmrbc (kg kg-1) mmrso4 (kg kg-1 so2 (kg kg-1) emiso2 (kg m-2 1.0e-13 0.0e+00 -5 0e-14 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year upwelling shortwave flux at TOA – arctic net radiative flux at TOA – arctic incident shortwave flux at TOA – arctic upwelling clear-sky longwave flux at TOA - arctic 0.00 0.3 rlut + rsut (W m-2) -0.03 0.3 rlutcs (W m-2) sdt (W m-2) 0.2 0e+00 rsut (W m--0.06 0.2 0.1 -5e-08 0.1 0.0 0.0 -0.122001 2003 2001 2003 2001 2002 2003 2001 2003 Year Year Year Year clear-sky net radiative dry deposition rate wet deposition rate total deposition rate flux at TOA - arctic of BC - arctic of BC - arctic of BC - arctic 4.0e-16 9.4e-16 1.1e-15 drybc + wetbc (kg m-2 s-1) rlutes + rsutes (W m-2) drybc (kg m-2 s-1) wetbc (kg m-2 s-1) 5.1e-16 6.4e-16 0.05 9.9e-1 2.2e-16 0.00 2003 2001 2002 2003 2001 2002 2001 2003 2001 2002 2003 Year Year Year Year (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3 (kg m-2 s-1) wet deposition rate of SO2 – arctic total deposition rate of S – arctic dry deposition rate of SO4 – arctic wet deposition rate of SO4 - arctic 2.0e-13 0.0e+00 wetso2 (kg m-2 s-1) dryso4 (kg m-2 s-1) (kg m-2 s-1 0e+00 -5.0e-14 -5e-14 -7e-14 -1.5e-13 -9e-14 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 Year Year Year convective cloud cover total cloud cover percentage - arctic percentage - arctic 0.004 0.003 0.0 0.002 %



surface flux of BC – arctic