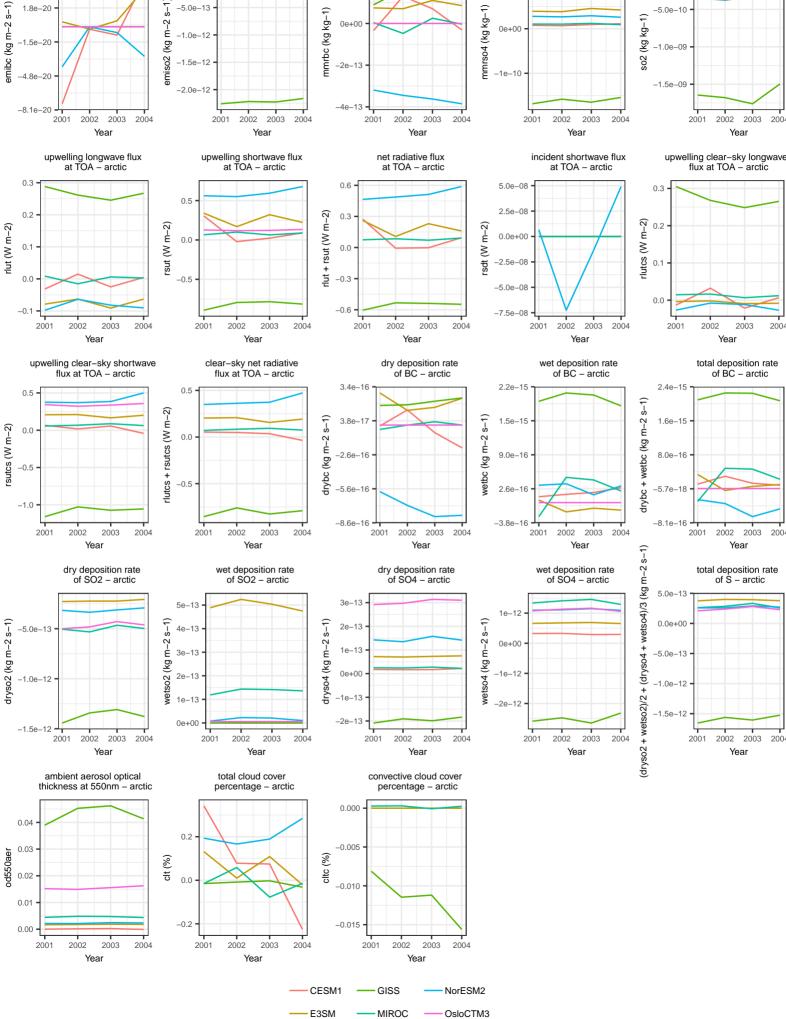
so2-at-height: absolute difference surface flux of SO2 – arctic surface concentration of SO4 – arctic surface concentration of SO2 – arctic surface concentration 0.0e+00 mmrbc (kg kg-1) mmrso4 (kg kg-1 so2 (kg kg-1) 0e+00 0e+00 -1.0e-12 -1.0e-09 -1.5e-09 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year upwelling shortwave flux at TOA – arctic incident shortwave flux at TOA – arctic upwelling clear-sky longwave flux at TOA – arctic net radiative flux at TOA - arctic 0.6 5 0e-08 rlut + rsut (W m-2) 0.3 rlutcs (W m-2) 0.2 sdt (W m-2) 0.1 -0.3 2002 2003 2003 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 3.4e-16 2.2e-15 2.4e-15 drybc + wetbc (kg m-2 s-1) drybc (kg m-2 s-1) wetbc (kg m-2 s-1) 3.8e-1 1.6e-15 1.5e-15 9.0e-16 8.0e-16 2003 2003 2002 2003 2001 2002 2001 2003 2001 2002 Year Year Year Year (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3 (kg m-2 s-1)dry deposition rate of SO4 – arctic wet deposition rate wet deposition rate total deposition rate of SO2 - arctic of SO4 – arctic of S - arctic 5.0e-13 wetso4 (kg m-2 s-1) 0.0e + 00dryso4 (kg m-2 s-1) 2e-13 0e+00 1e-13 -5.0e-13 0e+00 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 Year Year Year convective cloud cover total cloud cover percentage - arctic percentage - arctic



surface flux of BC – arctic