NH-atlantic: percent difference surface flux surface flux surface concentration surface concentration of BC - so2-no-season of SO2 - so2-no-season of BC - so2-no-seasor of SO4 - so2-no-season of SO2 - so2-no-season 1e+00 3e+00 0e+00 -1e-03 ∆ emibc emiso2 ∆ mmrso4 00+00 $\Delta so2$ 1e+00 0.0e+00 1e+00-1e+00-3e-032000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 upwelling shortwave flux at TOA – so2–no–season upwelling clear-sky longway flux at TOA - so2-no-seaso net radiative flux upwelling longwave flux incident shortwave flux at TOA – so2–no–season at TOA - so2-no-season at TOA - so2-no-season 1e-01 1e-07 1e-02 rsut 5.0e-01 5 0e-01 0e+00 ∆ rlut + 0e+00 2.5e-01 -5e-02 -1e-07 0.0e + 0.0e +-2e-022002 2003 2004 2002 2003 2004 2002 2003 2004 2001 2002 2003 2004 2002 2003 2004 2000 2001 2000 2000 Year Year Year Year Year dry deposition rate of BC – so2–no–season upwelling clear-sky shortway flux at TOA - so2-no-seaso clear-sky net radiative implied cloud response wet deposition rate flux at TOA - so2-no-seaso at TOA - so2-no-season of BC - so2-no-season rsutcs) 2.0e+00 2 0e+00 0e+00 1.5e+00 rlutcs --4e-01 rsut 5.0e-01 5 0e-01 -8e-01 _2e_01 0.0e+00 0.0e+00 -6e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 Year Year Year dry deposition rate of SO2 – so2–no–seasor wet deposition rate dry deposition rate of SO4 – so2–no–seasor wet deposition rate of SO4 – so2–no–season total deposition rate of BC - so2-no-season of SO2 - so2-no-season 8e-01 0.0e+00 ∆ drybc + wetbc 4e-01 -1e+00∆ wetso4 0e+00 -2e+00 0.0e+00 -5e-01 -4e-01 -3e+00-2.0e+00 -5.0e-01 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 $\frac{1}{3} dryso2 + wetso2)/2 + \frac{1}{3} dryso4 + wetso4)/3$ total deposition rate ambient aerosol optical total cloud cover - so2-no-se convective cloud cover - so2-noof S - so2-no-season thickness at 550nm - so2-no-s 2.5e-01 2e-01 0e+00 -2e+01 0.0e+00-1e+00 0e+00 ∆ clt <u>\</u> -4e+01 -1e-01 -2e+00 -5e-01 -6e+01-2e-01 -3e+0020002001200220032004 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 - so2-no-seas surface concentration column mass burden column mass burden column mass burden of DMS - so2-no-season of BC - so2-no-season of SO2 - so2-no-season of SO4 - so2-no-season 1e+00 6e+00 2e-01 5e-01 4e+00 oadso2 ∆ clivi ∆ loadbc 0e+00 0e+00 2e+00 -5e-01 -5e-01 -4e-01 0e+00 -6e-01

2000 2001 2002 2003 2004

Year

