NH-atlantic: absolute difference surface flux surface flux surface concentration surface concentration surface concentration of BC - shp-10p-red-1950 of SO2 - shp-10p-red-195 of SO4 - shp-10p-red-195 of SO2 - shp-10p-red-19 of BC - shp-10p-red-1950 3e-05 -1e+00 -6.0e-01 1e-01 2e-05 _2e+00 ∆ emibc $\Delta so2$ _8 0e_01 1e-05 -3e+00 0e+00 -1.0e+00 0e+00 -5e-01 -O: _5e+00 -1e-05 -1.2e+00 2000 2001 2002 2003 2004 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2000 2001 2002 2003 2004 Year Year Year Year Year upwelling longwave flux at TOA – shp-10p-red-195 upwelling shortwave flux at TOA – shp–10p–red–19! incident shortwave flux at TOA – shp–10p–red–19! upwelling clear-sky longwav flux at TOA - shp-10p-red-1 net radiative flux at TOA - shp-10p-red-195 5 0e-02 0e+00 1.0e-01 56-02 rsut -2e-02 5.0e-02 0.0e + 0.0e +큳 0e+00 -03 0.0e+0.0-4e-02-2 5e-02 -5 0e-02 -5e-02 -1e-02 -5.0e-02 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 upwelling clear-sky shortway clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - shp-10p-red-19 flux at TOA - shp-10p-red-19 at TOA - shp-10p-red-195 of BC - shp-10p-red-1950 of BC - shp-10p-red-1950 rsutcs) 2e-02 1e-01 4e-0 ∆ rlutcs + rsutcs rlutcs -0e+00 ∆ rsutcs wetbc 0e+00 Δ drybα 2e-01 rsut 0e+00 -2e-02 -2e-02 -1e-01 (rlut + -5e-02 -4e-02-4e-02 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 of BC – shp–10p–red–1950 dry deposition rate of SO2 – shp–10p–red–19 wet deposition rate of SO2 – shp-10p-red-199 dry deposition rate of SO4 – shp–10p–red–195 wet deposition rate of SO4 – shp-10p-red-195 -3.9e-0° -7.2e-014e-01 -3e-01 drybc + wetbc ∆ dryso2 ∆ dryso4 2e-01 -5e-01 0e+00 -5e-01 -6e-01 -2e-01 -7.8e-01 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 $\frac{dryso2 + wetso2}{2 + (dryso4 + wetso4)/3}$ total deposition rate Ice water path - shp-10p-Deichethyl sulphide (DMS) mole fraction - sh cloud cover ambient aerosol optical of S - shp-10p-red-19 percentage - shp-10p-red-1 thickness at 550nm - shp-10p-red-1 5.0e-01 -7.5e-01 1e+00 expression cltc (%) clivi (kg m⁻²) _lom lom) smp 2.5e-01 0e+00 -8.0e-01 ∆ od550aeı 5e-01 0.0e+00 -8.5e-01 -9.0e-01 -2.5e-01 0e+00 -8e-02 20002001200220032004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year Year load load of so4 - shp-10p-red-195 of bc - shp-10p-red-1950 3e-01 0e+00 loadso4 (kg m⁻²) 2e-01 oadbc $(kg m^{-2})$ -1e-01 1e-01 -2e-01 -3e-01 0e+00-4e-01 -1e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004

Year