NH-atlantic: absolute difference surface flux surface flux surface concentration surface concentration surface concentration of BC - shp-ind-shift-195 of SO2 - shp-ind-shift-19 of BC - shp-ind-shift-1950 of SO4 - shp-ind-shift-19! of SO2 - shp-ind-shift-19 -7.0e-01 -2.5e+00 -8.0e-01 -1.5e+00 -5.0e+00 -9.0e-01 0e+00 $\Delta so2$ -1e-01 -2.0e+00 -1.1e+00-1.0e+01 -1.2e+00 -2e-01 -1.3e+∩∩ -2.5e+00 -1.2e+0.12000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year upwelling longwave flux at TOA – shp-ind-shift-195 upwelling shortwave flux at TOA – shp–ind–shift–195 upwelling clear-sky longwar flux at TOA - shp-ind-shiftincident shortwave flux at TOA – shp-ind-shift-19! net radiative flux at TOA - shp-ind-shift-195 5.0e-02 2e-01 1e-01 0.0e+00 ∆ rlut + rsut 1e-01 ∆ rsut -5.0e-03 0e+00 0.0e + 000e+00 -1.0e-02 -2 5e-02 _1e_01 _1e_01 -1.5e-02 -5.0e-02 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - shp-ind-shift-19 at TOA - shp-ind-shift-195 of BC - shp-ind-shift-1950 of BC - shp-ind-shift-195 rsutcs) 2e-01 -2e-021e-01 rlutcs – 1e-01 rsu ∆ wetbc rsut -2e-01 -1e-01 (rlut + -5e-02 -1e-01 -2e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year dry deposition rate of SO2 – shp–ind–shift–19 wet deposition rate of SO2 – shp-ind-shift-19: dry deposition rate of SO4 – shp-ind-shift-19 wet deposition rate of SO4 – shp-ind-shift-19 -6.0e-01 -8.5e-01 -8.0e-0 -1.6e+00 ∆ dryso2 -9.0e-01 -9.5e-01 _1 0e+00 -1.0e+00 -1.7e+00 -1.2e+00 -1.0e+00 -1.2e+00 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Ice water path - shp-ind-Diffethyl sulphide (DMS) mole fraction - sh cloud cover ambient aerosol optical thickness at 550nm - shp-ind-shift-1 percentage - shp-ind-shift-1 5.0e-0.0expression cltc (%) 4e-01 clivi $(kg m^{-2})$ _lom lom) smb 2.5e-01 ∆ od550aeı -2e-02 0e+00 0.0e+00 4e-0 -4e-02 -2.5e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year load of bc - shp-ind-shift-1950 1e-01 0e+00

2.0e-05

1.5e-05

1.0e-05

0.0e+00

0e+00

-2e-02

-4e-02

∆ rlut

Year

5.0e