NH-atlantic: absolute difference surface flux of SO2 – shp–20p–red surface flux of BC – shp–20p–red surface concentration surface concentration surface concentration of BC - shp-20p-red of SO4 - shp-20p-red of SO2 - shp-20p-red 3e-06 -2.5e+00-1 6e+00 -1 8e+00 -5.0e+00 -3e+00 0e+00 0e+00 $\Delta so2$ _2 0e+00 -7.5e+00 -3e-06 -1e-01 -2.2e+00-1.0e+01-6e-06 -2e-01 -2.4e+00-5e+00 2000 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 Year upwelling longwave flux at TOA – shp–20p–red upwelling shortwave flux at TOA – shp–20p–red upwelling clear-sky longway flux at TOA - shp-20p-re net radiative flux incident shortwave flux at TOA – shp–20p–red at TOA - shp-20p-red 1e-01 5 0e-02 2.0e-02 8e-02 1.5e-02 0e+00 6e-02 0e+00 rsut # 4e-02 1.0e-02 -1e-01 0.0e + 0.0e +∆ rlut 5.0e-03 2e-02 -2e-01 -2 5e-02 0.0e+00 0e+00 -3e-01 -5.0e-03 -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 shortwa clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - shp-20p-re flux at TOA - shp-20p-red at TOA - shp-20p-red of BC - shp-20p-red of BC - shp-20p-red rsutcs) 2e-01 rsutcs -5e<u>-</u>02 -6.0e-02 rlutcs - $1e-0^{\circ}$ ∆ wetbc ∆ dryb(1e-01 -9.0e-02 0e+00 rsut -1e-01 0e+00rlut + -1e-01 -1.2e-01 -1e-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 Year Year total deposition rate of BC – shp–20p–red dry deposition rate of SO2 – shp-20p-red wet deposition rate of SO2 – shp–20p–red dry deposition rate of SO4 – shp-20p-red wet deposition rate of SO4 – shp–20p–red -1.6e+00-3.1e+00 -1.8e + 0.0-1.6e+00 4e-01 -1.8e + 00-3.2e+00 drybc + wetbc _1 9e+00 -1.8e+00 -2.0e+00 -3.3e+00 -2.2e+00-2 0e+00 -3 4e+00 0e+00 -2.4e+00-2.2e+00 -3.5e+00-2.1e+00 -2 6e+00 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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - shp-20p-Dimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical of S - shp-20p-red percentage - shp-20p-rethickness at 550nm - shp-20p-red 5.0e-01 5e-0° -1e-02 -3.6e+00 expression cltc (%) clivi (kg m⁻²) lom lom) smb 2.5e-01 0e+00∆ od550aer -2e-02 -3.8e+00 0.0e+0.0-3.9e+00 -5e-01 -4e-02 -4.0e+00 -2.5e-01 20002001200220032004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year load load of so4 - shp-20p-red of bc - shp-20p-red 3e-01 -8.0e-01 2e-01 $\log \log (\log \, m^{-2})$ $\mathsf{padbc}\left(\mathsf{kg}\;\mathsf{m}^{-2}\right)$ 1e-01 0e+00 -1.2e+00 -1e-01 -1.4e+00 -2e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year