shp-20p-red: absolute difference surface flux of BC – NH–atlantic surface flux surface concentration of BC – NH–atlantic surface concentration surface concentration of SO2 - NH-atlantic of SO4 - NH-atlantic of SO2 - NH-atlantic 3e-06 -2.5e+00 -1 8e+00 -5.0e+00 -3e+00 0e+00 0e+00 $\Delta so2$ _2 0e+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 2002 2003 2004 2000 2001 Year Year Year Year Year upwelling longwave flux at TOA – NH–atlantic upwelling shortwave flux at TOA – NH–atlantic upwelling clear–sky longway flux at TOA – NH–atlantic net radiative flux at TOA – NH-atlantic incident shortwave flux at TOA – NH–atlantic 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 0.0e + 0.0e +∆ rlut 5.0e-03 2e-02 -2e-01 -2 5e-02 0.0e+00 -3e-01 -5.0e-03 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 wet deposition rate of BC – NH–atlantic clear-sky net radiative implied cloud response dry deposition rate upwelling clear-sky shortwa flux at TOA - NH-atlantic flux at TOA - NH-atlantic at TOA - NH-atlantic of BC - NH-atlantic rsutcs) 2e-01 rlutcs + rsutcs -6.0e-02 rlutcs - $1e-0^{\circ}$ ∆ rsutcs ∆ wetbc ∆ drybo 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 – NH–atlantic dry deposition rate of SO2 – NH–atlantic wet deposition rate of SO2 – NH-atlantic dry deposition rate of SO4 – NH–atlantic wet deposition rate of SO4 – NH-atlantic -1.6e+00 -3.1e+00-1.8e + 0.0-1.6e+00 4e-01 -1.8e + 0.0-3.2e+00drybc + wetbc _1 9e+00 -1.8e+00 -2.0e+00 2e -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 Year $\frac{dryso2 + wetso2}{2 + (dryso4 + wetso4)/3}$ total deposition rate Ice water path - NH-atlan@imethyl sulphide (DMS) mole fraction cloud cover ambient aerosol optical of S - NH-atlantic percentage - NH-atlantic thickness at 550nm - NH-atlantic 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 - NH-atlantic of bc - NH-atlantic 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