NH-atlantic: absolute difference surface flux of BC – shp–10p–red surface flux surface concentration of BC – shp–10p–red surface concentration surface concentration of SO2 - shp-10p-red of SO4 - shp-10p-red of SO2 - shp-10p-red 1e-13 emibc (kg $\mathrm{m}^{-2} \mathrm{s}^{-1}$) mmrbc (kg kg-1) emiso2 (kg m⁻² s so2 (kg kg – 1) nmrso4 (kg kg -5e-12 -7.3e-2 -1 0e-20 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 longwave flux at TOA – shp–10p–red upwelling shortwave flux at TOA – shp–10p–red upwelling clear-sky longwav flux at TOA - shp-10p-red incident shortwave flux at TOA – shp–10p–red net radiative flux at TOA - shp-10p-red 5 0e=02 5e-02 1e-01 $rsut(W m^{-2})$ 5 rlut (W m-2) rsut (Wm-2)0e+00 (Wm-2)rlutcs (W m-5e-02 0.0e + 0.0-1e-01 2e-02 -5e-02 rsdt rlut + 0e+00 -2 5e-02 -1e-01 -2e-01 0e+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 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 flux at TOÁ - shp-10p-red at TOA - shp-10p-red of BC - shp-10p-red of BC - shp-10p-red rlutcs - rsutcs (W m⁻²) 1.2e-16 1e-01 ·lutcs + rsutcs (W m⁻²) 0e+00 2e-02 rsutcs (W m-2) 5.7e-16 drybc (kg $m^{-2} s^{-1}$ vetbc (kg m⁻² s⁻ 0e+00 -1e-02 0e+00 -2e-02 -2e-02 1e-01 rsut – -3e-02rt H _9 2e_1 _9 5e_16 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 dry deposition rate of SO4 – shp–10p–red wet deposition rate of SO4 – shp–10p–red total deposition rate of BC – shp–10p–red dry deposition rate of SO2 – shp–10p–red wet deposition rate of SO2 – shp–10p–red 1.2e-15 $\mathrm{drybc} + \mathrm{wetbc} \, (\mathrm{kg} \, \mathrm{m}^{-2} \, \mathrm{s}^{-1})$ -1 0e-14 wetso2 (kg $\mathrm{m}^{-2} \mathrm{s}^{-1}$ wetso4 (kg $\mathrm{m}^{-2} \mathrm{s}^{-1}$ dryso2 (kg m $^{-2}$ s $^{-1}$ 6.7e-16 dryso4 (kg m^{-2} s⁻ -1 0e-13 1.6e-16 -1.4e-13 -2.0e-14 -3.6e-16 -3.0e-14 -8.8e-16 -1.5e-13 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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - shp-10pDimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical of S - shp-10p-red percentage - shp-10p-red thickness at 550nm - shp-10p-red -9.6e-14 1e-02 0e+00 cltc (%) clivi (kg m⁻²) lom lom) smb $(kg m^{-2} s^{-1})$ 0e+00 od550aer expression -1e-02 0.0e+00 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 of bc - shp-10p-red -2e-08 $loadso4 (kg m^{-2})$ -3e-08 loadbc (kg m 0.0e + 00-4e-08_2 5e_11 -5e-08 -6e-08 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year