SH-land: absolute difference surface flux of BC – shp–atl–shift surface flux of SO2 – shp–atl–shift surface concentration surface concentration surface concentration of BC - shp-atl-shift of SO4 - shp-atl-shift of SO2 - shp-atl-shift 9e-05 2e-01 0e+00 2e-01 6e-05 1e-01 20-01 1e-01 -2e-03 ∆ emiso2 ∆ mmrbc $\Delta so2$ 0e+00 3e-05 -4e-03 0e+00 -1e-01 -6e-03 -3e-05 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year upwelling longwave flux at TOA – shp-atl-shift upwelling shortwave flux at TOA – shp–atl–shift upwelling clear-sky longwar flux at TOA - shp-atl-shi net radiative flux at TOA – shp–atl–shift incident shortwave flux at TOA - shp-atl-shift 5.0e-02 5.0e-03 0e+00 1e-01 1.0e-01 ∆ rlut + rsut 0.0e+0.0-2e-02 0.0e + 0.0e +5.0e-02 -4e-02 0.0e+00 -2 5e-02 -5.0e-03 -5.0e--6e-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 dry deposition rate of BC – shp–atl–shift upwelling clear-sky shortwave clear-sky net radiative implied cloud response wet deposition rate flux at TOA - shp-atl-shift flux at TOA - shp-atl-shift at TOA - shp-atl-shift of BC - shp-atl-shift rsutcs) 2e-01 4e-01 2e-02 2e-02 rsutcs 1e-01 rlutcs -1e-01 ∆ rsutcs ∆ wetbc △ drybc 1e-02 ∆ rlutcs + 1e-02 0e+00 0e+00 0e+00 0e+00 (rlut + -1e-01 -2e-01 -1e-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-atl-shift dry deposition rate of SO2 – shp-atl-shift wet deposition rate of SO2 – shp-atl-shift dry deposition rate of SO4 – shp-atl-shift wet deposition rate of SO4 – shp-atl-shift 2e-01 5.0e-01 2e-01 0e+00 drybc + wetbc 1e-01 2.5e-01 -2e-01 ∆ dryso2 ∆ dryso4 0e+00 0.0e+00 0e+00 -1e-01 0e+00 -01 -2.5e-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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - shp-atl-simethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical thickness at 550nm - shp-atl-shift of S - shp-atl-shift percentage - shp-atl-shif 5.0e-01 5.0e-01 _lom lom) smb clivi (kg m⁻²) 0.0e+00 expression cltc ∆ od550aeı 2.5e-01 -5.0e-01 -2e-010.0e+00 -1.0e+00-01 -4e-01 -1.5e+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-atl-shift of bc - shp-atl-shift 2e-01 1e-01 oadso4 $(kg m^{-2})$ loadbc (kg m⁻² 0e+00 0e+00 -1e-01 -2e-01 -2e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year