shp-atl-shift: absolute difference surface flux surface flux surface concentration surface concentration surface concentration of BC - arctic of BC - arctic of SO2 - arctic of SO4 - arctic of SO2 - arctic 1.5e+00 1e-04 3e-02 1.6e+00 4e-01 1.2e+00 5e-05 ∆ emibc ∆ emiso2 2e-01 2e-02 $\Delta so2$ 0e+00 0e+00 1e-02 0.00+00 4 0e-01 -5e-05 -5.0e-01 2002 2000 2001 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year Year upwelling longwave flux at TOA – arctic upwelling shortwave flux at TOA – arctic incident shortwave flux at TOA – arctic upwelling clear-sky longway flux at TOA - arctic net radiative flux at TOA – arctic 1.5e-01 5.0e-02 1.5e-01 1.5e-02 2e-02 1.0e-01 1.0e-01 rsut 5 0e-02 5.0e-02 1e-02 0.0e + 0.0e +∆ rlut -0.0e+0.05.0e-03 0.0e+00 0e+00 -5.0e-02 -2 5e-02 0.0e + 0.0e +-5 0e-02 -1.0e-01 -1e-02 -1.0e-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 - arctic flux at TOA - arctic at TOA - arctic of BC - arctic of BC - arctic rsutcs) 1.5e-01 rsutcs 1.0e-01 rlutcs -0e+00 0.0e + Δ rsutcs △ drybc 5 0e-02 rlutcs + 0.0e+00 (rlut + -5.0e-02 -5.0e-01 0e+00 16_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 Year Year Year dry deposition rate of SO4 – arctic total deposition rate of BC – arctic dry deposition rate of SO2 – arctic wet deposition rate of SO2 – arctic wet deposition rate of SO4 – arctic 1.6e+00 3.6e-01 7e_01 5.0e-01 drybc + wetbc 3.2e 1.2e+00 ∆ dryso2 6e-01 2.5e-0 2.8e 8 0e=01 0.0e+00 0.0e+00 -2.5e-01 2.4e-01 4.0e-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 Year $\frac{dryso2 + wetso2}{2 + (dryso4 + wetso4)/3}$ Dimethyl sulphide (DMS) mole fractic total deposition rate cloud cover Ice water path - arctic ambient aerosol optical percentage - arctic thickness at 550nm - arctic 8.5e-01 5.0e-01 6e-01 8 5e-01 2.5e-01 clivi (kg m⁻²) 8.0e-01 3e-01 당 ∆ od550aeı 0.0e+00 0e+00 ow) 7.5e-01 0e+00 -2.5e-01 -5e-01 dms 1e-01 7.0e-01 -3e-01 -5.0e-01 -1e+00 0e+00 -7 5e-01 -6e-01 20002001200220032004 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 load load of so4 - arctic of bc - arctic 7.5e-01 2.5e-01 loadso4 (kg m⁻²) 5.0e-01 loadbc (kg m 0.0e+00 2.5e-01 0.0e+00 -5.0e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year