## NH-pacific: absolute difference surface flux of SO2 – shp–atl–shift surface flux of BC – shp–atl–shift surface concentration of BC – shp-atl-shift surface concentration surface concentration of SO4 - shp-atl-shift of SO2 - shp-atl-shift -6.0e+00 2e-01 5.0e-06 1e-01 \_8 0e+00 -4e+00 2.5e-06 0e+00 -1.0e+01 -2 0e+01 0.0e+00 -1e-01 -1.2e+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 Yea Year Year Year Year upwelling longwave flux at TOA – shp-atl-shift upwelling shortwave flux at TOA – shp–atl–shift upwelling clear-sky longway flux at TOA - shp-atl-shif net radiative flux incident shortwave flux at TOA - shp-atl-shift at TOA - shp-atl-shift 5 0e-02 -1.0e-01 1.5e-02 ∆ rlut + rsut 1.0e-02 \_1 5e\_01 tn √ 2e-02 0.0e + 0.0e +-2.0e-01 5.0e-03 -2 5e-01 -2 5e-02 0.0e+00 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 shortwa clear-sky net radiative dry deposition rate wet deposition rate implied cloud response flux at TOA - shp-atl-shif flux at TOA - shp-atl-shif at TOA - shp-atl-shift of BC - shp-atl-shift of BC - shp-atl-shift rsutcs) 4e-01 1e-01 -6.0e-02 -7.5e-02 rsutcs rlutcs -0e+00 ∆ rsutcs △ drybc -1.0e-01 ∆ rlutcs + rsut -1e-01 0e+00 -01 (rlut + -2e-0'2000 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+00-6.8e+00 -2.9e+00-3e+002e-01 -6.9e+00 drybc + wetbc wetso4 ∆ dryso4 0e+00 -3.1e+00-4e+00 -5e+00 -7.1e+00 -2e-01 -3.3e+002000 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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - shp-atl-shimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical thickness at 550nm - shp-atl-shift percentage - shp-atl-shift -6.4e+00% 4e-01 0e+00 clivi (kg $m^{-2}$ ) \_lom lom) smp -6.5e+00 expression cltc 0e+00 2e-01 ∆ od550aeı -6.6e+00 0e+00 4e-0 -6.7e+00 -2e-01 -4e-02 20002001200220032004 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 Year Year Year Year Year load load of so4 - shp-atl-shift of bc - shp-atl-shift -1.0e+00 $\log \log (\log \, m^{-2})$ loadbc (kg m<sup>-2</sup>) 2.5e-01 -2.0e+000.0e+00 -2.5e+00 -2.5e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year