shp-atl-shift-1950: absolute difference surface concentration of BC – SH–sea surface flux surface concentration surface concentration of SO2 - SH-sea of BC - SH-sea of SO4 - SH-sea of SO2 - SH-sea 1e-01 2.5e-01 0e+00 0e+00 0e+00 0.0e+00 -4e-06 4e-03 -2e-01 -2 5e-01 -8e-06 0e+00 -3e-01 -5.0e-01 -4e-01 2002 2003 2004 2002 2003 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2000 2000 2001 2000 2001 2002 2003 2004 Year Year Year Year Year upwelling longwave flux at TOA – SH–sea upwelling shortwave flux at TOA – SH-sea net radiative flux at TOA – SH–sea incident shortwave flux at TOA – SH–sea upwelling clear-sky longwar flux at TOA - SH-sea 5.0e-02 4.0e-025.0e-03 2e-02 0.0e+0.0rsut ∆ rlut 0.0e + 0.0e +_4 0e_02 ₽ 1e-02 -5e-02 0.0e+00 -8.0e-02 -2 5e-02 0e+00 -1 2e-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 upwelling clear-sky shortway clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - SH-sea flux at TOA - SH-sea at TOA - SH-sea of BC - SH-sea of BC - SH-sea rsutcs) 1e-02 1e-02 0.0e+00rsutcs 5e-03 rlutcs -00+00 ∆ rsutcs ∆ drybc 5e-03 ∆ wetbo rlutcs + 0e+00 0e+00 -5e-03 -2e-01 -5.0e-01 (rlut + 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 – SH–sea dry deposition rate of SO2 – SH–sea wet deposition rate of SO2 – SH–sea dry deposition rate of SO4 – SH–sea wet deposition rate of SO4 – SH–sea 0.0e+00 2e-01 2e-02 0e+00 ∆ dryso4 0e+00 1e-02 -5e-01 -1e-0° -1e-01 -2.0e-01 0e+00 -1e+00 -3e-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 $\frac{dryso2 + wetso2}{2 + (dryso4 + wetso4)/3}$ Ice water path - SH-sea Dimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical of S - SH-sea percentage - SH-sea thickness at 550nm - SH-se 2e-02 1e-01 0e+008 clivi $(kg m^{-2})$ _lom lom) smb 5e-02 expression cltc 0e+00 ∆ od550ae 1e-01 -5e-02 0e+00 0e+00 -2e-02 -5e-02 0e+00 -1e-01 -1e-01 -2e-0-1e-0 20002001200220032004 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 load load of so4 - SH-sea of bc - SH-sea 4e-01 loadso4 (kg m⁻²) loadbc (kg m $^{-2}$) 2e-01 0e+00 -2e-01 -4e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year