shp-atl-shift-1950: absolute difference surface concentration of BC – sea surface flux surface concentration surface concentration of BC - sea of SO2 - sea of SO4 - sea of SO2 - sea -1e-01 -2e-01 5.0e-06 0e+00 2e-01 -2e-01 -4e-01 ∆ emiso2 _1e_01 $\Delta so2$ 1e-01 -5.0e-06 0e+00 -1 0e-05 -4e-01 _8e_01 -1.5e-05 -1e-01 2000 2001 2002 2003 2004 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year upwelling longwave flux at TOA – sea upwelling shortwave flux at TOA – sea upwelling clear-sky longwav flux at TOA - sea net radiative flux incident shortwave flux at TOA – sea at TOA – sea 5.0e-02 4e-03 2e-02 2e-03 0e+00 00+00 0.0e + 00-2e-02 ∆ rlut 0e+00 0e+00 -2e-02 -4e-02 -2 5e-02 -4e-02-2e-03 -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 upwelling clear-sky shortway clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - sea flux at TOA - sea at TOA - sea of BC - sea of BC - sea rsutcs) 5.0e-02 0e+00 0e+00 1e-01 rsutcs 0.0e+00 rlutcs -∆ rsutcs △ wetbc -4e-03 Δ drybα 0e+00 ∆ rlutcs + -5.0e-02 0e+00 rsut -2e-02 -8e-03 -1e-02 -1.0e-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 Year Year dry deposition rate of SO4 – sea total deposition rate of BC – sea dry deposition rate of SO2 – sea wet deposition rate of SO2 – sea wet deposition rate of SO4 – sea 0e+00 -1.0e-01 -2.3e-01 1e-01 -1.5e-01 drybc + wetbc ∆ dryso2 ∆ dryso4 -24e-01-1e-01 -2.5e-01 -2e-01 -2 4e-01 -4e-012000 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 fract total deposition rate cloud cover Ice water path - sea ambient aerosol optical of S - sea percentage - sea thickness at 550nm - sea 5.0e-02 0e+00 0e+00 clivi (kg m^{-2}) _lom lom) smp -2.5e-01 ctc -5.0e-02 ∆ od550ae -1e-01 -3.0e-01 -2e-02 -2e-01 -1.5e-01 -3.5e-01 -01 20002001200220032004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 Year Year Year Year Year load load of so4 - sea of bc - sea 2e-01 1.0e-0 $\log \log (\log \, m^{-2})$ loadbc (kg m⁻² 1e-01 5.0e-02 0.0e+00 0e+00 -02 -1e-01 -1.0e-01 -2e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year