shp-ind-shift: absolute difference surface concentration of BC – SH–sea surface flux surface flux surface concentration surface concentration of BC - SH-sea of SO2 - SH-sea of SO4 - SH-sea of SO2 - SH-sea 2e-05 2.0e-01 2e-01 4e-01 1e-01 1.5e_01 Δ emibc ∆ emiso2 0e+00 0e+00 1.0e-01 0e+00 -1e-01 -2e-05 2e-01 -2e-0 0.0e + 002000 2001 2000 2001 2002 2003 2004 2002 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2000 2001 2000 2001 Year Year Year Year Year upwelling longwave flux at TOA – SH-sea upwelling shortwave flux at TOA – SH–sea incident shortwave flux at TOA – SH–sea upwelling clear-sky longwav flux at TOA - SH-sea net radiative flux at TOA – SH-sea 2e-02 5.0e-02 1e-02 2e-02 0e+00 ∆ rlut 0e+00 0.0e + 0.0e +∆ rlut --2e-02 -2e-02 -2 5e-02 _2e_02 -4e-02 -3e-02 -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 dry deposition rate of BC – SH–sea upwelling clear-sky shortway clear-sky net radiative implied cloud response wet deposition rate flux at TOA - SH-sea flux at TOA - SH-sea at TOA - SH-sea of BC - SH-sea 1e-02 1e-01 2e-02 ∆ rlutcs + rsutcs rlutcs – 00+00 0e+00 0e+00 ∆ rsutcs ∆ wetbc 0e+00 _1e_01 -2e-01 rlut + -2e-02 -2e-02 -4e-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 wet deposition rate of SO4 – SH-sea 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 6e-01 2e-01 2e-02 5e-01 drybc + wetbc 0e+00 1e-02 4e-01 -2e-01 0e+00 3e-01 -4e-01 2e-01 -1e-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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - SH-sea Dimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical of S - SH-sea thickness at 550nm - SH-se 2.5e-01 4e-01 1e-01 2e-01 _lom lom) smp clivi $(kg m^{-2})$ 2.0e-01 2e-01 5e-02 expression cltc ∆ od550ae 5e-02 1e-01 1.5e-01 0e+00 0e+00 0e+00 0e+00 -2e-01 -5e-02 -1e-01 20002001200220032004 2000 2001 2002 2003 2004 2002 2003 2004 2002 2003 2004 2002 2003 2004 2000 2001 2000 2001 2000 2001 Year Year Year Year Year load of so4 - SH-sea of bc - SH-sea $\log \log (\log \, m^{-2})$ loadbc (kg m⁻²) 0e+00 2e-01 -2e-01 1e-01 0e+00 -4e-012000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year