SH-sea: absolute difference surface flux of BC – shp–ind–shift surface flux surface concentration surface concentration surface concentration of SO2 - shp-ind-shift of BC - shp-ind-shift of SO4 - shp-ind-shift of SO2 - shp-ind-shift 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 2002 2003 2004 2002 2003 2002 2002 2003 2004 2002 2003 2004 2000 2001 2000 2001 2000 2001 2000 2001 Year Year Year Year Year upwelling longwave flux at TOA – shp–ind–shift upwelling shortwave flux at TOA – shp-ind-shift incident shortwave flux at TOA – shp-ind-shift upwelling clear–sky longwav flux at TOA – shp–ind–shif net radiative flux at TOA - shp-ind-shift 20-02 5 0e-02 1e-02 2e-02 0e+00 ∆ rlut rsut 0e+00 0.0e + 0.0e +∆ rlut --2e-02 -2e-02 -2 5e-02 _2e_02 -4e-02 -3e-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 - shp-ind-shift flux at TOA - shp-ind-shift at TOA - shp-ind-shift of BC - shp-ind-shift of BC - shp-ind-shift rsutcs) 4e-01 1e-02 1e-01 2e-02 rlutcs + rsutcs rlutcs -00+00 0e+00 0e+00 ∆ rsutcs ∆ wetbc 0e+00 _1e_01 rsut -2e-01 rlut + -2e-01 -2e-02 -2e-02 -4e-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 wet deposition rate of SO4 – shp-ind-shift total deposition rate of BC – shp-ind-shift dry deposition rate of SO2 – shp–ind–shift wet deposition rate of SO2 – shp–ind–shift dry deposition rate of SO4 – shp–ind–shift 6e-01 2e-01 2e-02 5e-01 drybc + wetbc 0e+00 ∆ dryso4 1e-02 4e-01 -2e-01 0e+00 3e-01 1e-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 Year dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - shp-ind-spimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical of S - shp-ind-shift percentage - shp-ind-shift thickness at 550nm - shp-ind-2.5e-01 1e-01 4e-01 1e-01 2e-01 "lom lom) smp clivi $(kg m^{-2})$ 2.0e-01 2e-01 expression cltc 5e-02 ∆ od550ae 5e-02 1e-01 1.5e-01 0e+00 0e+00 0e+00 0e+00 -2e-01 -5e-02 -5e-02 20002001200220032004 2000 2001 2002 2003 2004 2002 2003 2004 2002 2003 2004 2000 2001 2000 2001 2000 2001 2002 2003 2004 Year Year Year Year Year load load of so4 - shp-ind-shift of bc - shp-ind-shift $\log \log (kg m^{-2})$ loadbc (kg m⁻²) 0e+00 2e-01 -2e-01 1e-01 0e+00 -4e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year