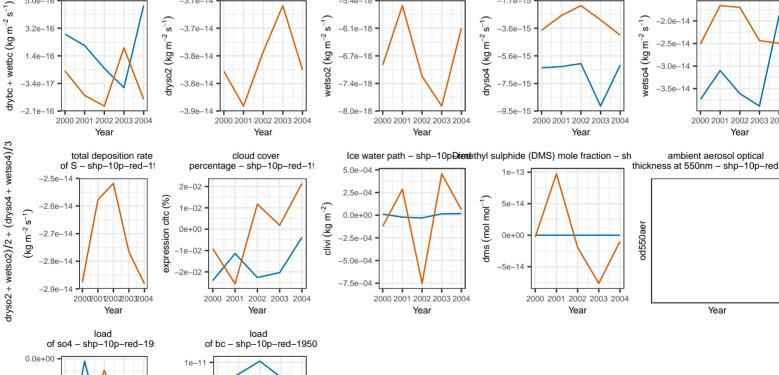
NH-sea: absolute difference surface flux surface concentration surface concentration surface concentration of SO2 - shp-10p-red-19 of BC - shp-10p-red-195 of SO4 - shp-10p-red-195 of SO2 - shp-10p-red-19 2e-14 -7.0e-13 kq-1-9.0e-13 mmrso4 (kg kg (kg kg – 0e+00 nmrbc (kg so₂ -5.1e-14 -2e-14 -5 2e-14 -6e-12 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 shortwave flux at TOA – shp–10p–red–19 upwelling clear-sky longwa flux at TOA - shp-10p-redincident shortwave flux at TOA – shp–10p–red–19 net radiative flux at TOA - shp-10p-red-195 5.0e-02 $rsut(W m^{-2})$ 1.0e-02 5 2.5e-02 2e-02 (Wm-2)lutcs (W m-5.0e-03 0.0e + 0.00.0e + 000e+00 rsdt 0.0e+00 -2.5e-02 -2.5e-02 -2e-02 -5.0e-03 -5.0e-02 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year implied cloud response dry deposition rate wet deposition rate clear-sky net radiative flux at TOA - shp-10p-redat TOA - shp-10p-red-19 of BC - shp-10p-red-19 of BC - shp-10p-red-19 rsutcs (W m⁻²) 5.0e 1.0e-02 6.0e-17 3.4e-16 drybc (kg $m^{-2} s^{-1}$ vetbc (kg m⁻² s⁻ 5.0e-03 0.0e+0.02.9erlutcs -5.0e-03 0.0e+00 rsut – -1.0e-02 rt H _3 4e_1 _2 1e_16 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 SO4 – shp–10p–red–19 dry deposition rate of SO2 – shp–10p–red–19 wet deposition rate of SO2 – shp-10p-red-19 wet deposition rate of SO4 – shp-10p-red-19 -3.7e-14 -2.0e-14 wetso2 (kg m⁻² s⁻ dryso4 (kg m^{-2} s⁻ wetso4 $(kg m^{-2})$ -3.8e-14 -6.7e-18 -5.6e-15 -3.0e-14 -3.5e-14 -9.5e-15 -8.0e-18 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Ice water path - shp-10pDienethyl sulphide (DMS) mole fraction - sh cloud cover ambient aerosol optical percentage - shp-10p-red-19 thickness at 550nm - shp-10p-red-1 clivi (kg m^{-2}) _lom lom) smb od550aeı 0e+00 -5.0e-04 -5e-14 -7.5e-04 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year



surface flux

of BC - shp-10p-red-19

2000 2001 2002 2003 2004

Year

upwelling longwave flux at TOA – shp–10p–red–19

2000 2001 2002 2003 2004

Year

upwelling clear-sky shortway

flux at TOA - shp-10p-red-1

2000 2001 2002 2003 2004

Year

total deposition rate of BC – shp-10p-red-19!

əmiso2 (kg m $^{-2}$ s $^{-1}$

rsut (Wm-2)

rsutcs (W m⁻²)

loadbc (kg m⁻²)

5e-12

0e+00

-5e-12

2000 2001 2002 2003 2004

 $\mathrm{emibc}\,(\mathrm{kg}\,\mathrm{m}^{-2}\,\mathrm{s}^{-1})$

8.1e-2

3.9e-21

-3.3e-22

-4 6e-2

5.0e-02

2.5e-02

0.0e+00

-2.5e-02

5e-03

0e+00

-5e-03

5.0e-16

3.2e-16

1.4e-16

dryso2 + wetso2)/2 + (dryso4 + wetso4)/3

oadso4 $(kg m^{-2})$

-2.5e

-5.0e-09

-1.0e-08

2000 2001 2002 2003 2004

Year

rlut (Wm-2)

rsutcs (W m-2)