bc-no-season: absolute difference surface flux of SO2 – NH-sea surface flux of BC surface concentration surface concentration of SO4 – NH–sea surface concentration of SO2 – NH–sea NH-sea 0e+00 5e-14 emiso2 $(kg m^{-2} s^{-1})$ -1e-12 nmrbc (kg kg⁻¹) nmrso4 (kg kg so2 (kg kg⁻1 2e-14 0e+00 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year Year longwave flux at TOA -NH-sea net radiative flux at TOA – NH–sea incident shortwave flux at TOA – NH–sea clear-sky longwave flux at TOA - NH-sea shortwave flux at TOA – NH-sea 0.10 2.0e-07 0.06 rlut + rsut $(W m^{-2})$ 0.1 0.05 rlutcs $(W m^{-2})$ $rsut (W m^{-2})$ $rsdt (W m^{-2})$ 1 5e-07 0.0 0.03 0.00 1.0e-07 0.0 -0.1 0.00 5.0e-08 -0 ' -0.2 0.0e+00 -0.03 2001 2003 2001 2003 2001 2003 2002 2003 2004 2001 2003 Year Year Year Year Year dry deposition rate of BC – NH–sea wet deposition rate of BC – NH-sea clear-sky shortwave clear-sky net radiative implied cloud response flux at TÓA - NH-sea flux at TOA - NH-sea at TOA - NH-sea rlut + rsut – rlutcs – rsutcs (W m $^{-2}$) -1.3e-16 0.02 rlutcs + rsutcs (W m^{-2}) 0.000 drybc (kg m $^{-2}$ s $^{-1}$) wetbc (kg m^{-2} s⁻¹ 0.00 -0.025 -0.02 0.00 -0.04 -0.05 -0.075 -0.10 -8 8e-15 2003 2001 2002 2003 2001 2003 2001 2003 2001 2002 2003 2001 2002 Year Year Year Year Year total deposition rate of BC – NH–sea dry deposition rate of SO4 – NH–sea wet deposition rate of SO4 – NH–sea dry deposition rate wet deposition rate of SO2 - NH-sea of SO2 - NH-sea 6.1e-15 5.4e-15 2.0e-13 $dryso2 (kg m^{-2} s^{-1})$ 1.5e-15 wetso2 $(kg m^{-2} s^{-1})$ 2.8e-15 wetso4 (kg m⁻² s⁻¹) dryso4 (kg m⁻² s⁻¹) -3.0e-15 5.0e-14 0.0e + 0.00e+00 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year total deposition rate of S – NH–sea ambient aerosol optical convective cloud cover percentage – NH–sea total cloud cover 0.025 0.000 0.1 0.000 -0.025 $(kg m^{-2} s^{-1})$ -0.025 -0.050 cltc 0.0 -0.075 -0.050-0.075 2002 2003 2004 2002 2003 2002 2003 2004 2002 2003 2001 2001 2004 2001 2001 2004

Year

MIROC

NorESM2

GFDI

GISS

Year

OsloCTM3

UKESM

Year

CFSM1

CESM2

F3SM

GEOS

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

rlut $(W m^{-2})$

rsutcs $(W m^{-2})$

drybc + wetbc (kg m⁻² s⁻¹)

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

Year