bc-no-season: absolute difference surface flux of SO2 – bc–no–season surface flux of BC – bc–no–season surface concentration surface concentration of SO4 – bc–no–season surface concentration of SO2 – bc–no–season of BC - bc-no-season 5.0e+00 0.0e+00 1.2e+00 emibc (kg m-2 s-1) -2.5e+01 mmrbc (kg kg-1) so2 (kg kg-1) mmrso4 (kg -5.0e+01 0.0e+00 2e+00 4.0e-01 _7 5e+01 -2.5e+00 0e+00 0.00+00 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year Year upwelling longwave flux at TOA – bc-no-season upwelling shortwave flux at TOA – bc–no–season upwelling clear-sky longwav flux at TOA - bc-no-seaso net radiative flux incident shortwave flux at TOA - bc-no-season at TOA - bc-no-season 2e-01 0.0e+00 lut + rsut (W m-2) 2e-02 rlutcs (W m-2) rsut (W m-2) rsdt (W m-2) 1e-01 0e+00 0e+00 -5.0e-08 0e+00 -1e-0 2003 2002 2003 2003 2002 2003 2001 2002 2001 2001 2002 2003 2004 2001 2002 2001 Year Year Year Year Year upwelling clear-sky shortwave flux at TOA - bc-no-seasor clear-sky net radiative dry deposition rate wet deposition rate total deposition rate flux at TOA - bc-no-season of BC - bc-no-season of BC - bc-no-season of BC - bc-no-season drybc + wetbc (kg m-2 s-1) 2e-01 wetbc (kg m-2 s-1) drybc (kg m-2 s-1 2e+01 ·lutcs + rsutcs (W 2e+01 1e-01 0e+00 -5e+00 0e+00 0e+00 -2e+01 2001 2003 2001 2003 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 Year Year Year Year Year (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3 (kg m-2 s-1) dry deposition rate of SO4 – bc–no–season dry deposition rate wet deposition rate wet deposition rate total deposition rate of SO2 - bc-no-season of SO2 - bc-no-season of SO4 - bc-no-season of S - bc-no-season 5.0e-01 1e+00 4e+00 (kg m-2 s-1) (kg m-2 s-1) wetso2 (kg m-2 s-1) 0e+00 3e+00 -5.0e-01 2e+00 dryso4 -1e+001e+00 -1.5e+000e+00 -2e+00 2001 2003 2001 2003 2001 2003 2002 2003 2002 2003 Year Year Year Year Year ambient aerosol optical convective cloud cover percentage – bc-no-season total cloud cover percentage - bc-no-seaso 2.5e-01 5.0e-01 0.0e+00 clt (%) -5.0e-01 -2 5e-01 -1.0e+00 -1.5e+00

2002

MIROC

NorESM2

Year

GFDI

OsloCTM3

UKESM

GEOS

4e-01

0e+00

-4e-01

1.5e-01

1.0e-01

5.0e-02

0.0e+00

-5.0e-02

rsutcs (W m-2)

0e+00

8e-01

4e-01

0e+00

0e+00

-2e+01

-4e+01

-6e+01

2002

Year

2003

2002

CESM₁

E3SM

2003

GISS

CESM2

Year

dryso2 (kg m-2 s-1)

rlut (W m-2)

emibc (kg m-2 s-1)