no-so4: percent difference surface flux surface flux surface concentration surface concentration surface concentration of BC - sea of SO2 - sea of BC - sea of SO4 - sea of SO2 - sea -1.0e+002.5e-01 1e-05 2e+00 1.8e+00 0.0e+00 5e-06 1.5e + 001e+00 -2.5e+000e+00 1 20+00 -3.0e+00 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 upwelling longwave flux at TOA – sea upwelling shortwave flux at TOA – sea upwelling clear-sky longwave flux at TOA - sea net radiative flux incident shortwave flux at TOA - sea at TOA - sea 9e-02 4e-01 4e - 08rsut 2e-08 2e-02 2e-01 ∆ rsut ∆ rlut + r 3e-02 0e+00 0e+00 00 ± 00 -2e-08 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2001 2002 2003 2004 Year Year Year Year upwelling clear-sky shortwave flux at TOA - sea clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - sea at TOA - sea of BC - sea of BC - sea rsutcs) 1.5e+00 3e-01 1e-01 rsutcs rlutcs -2e-01 5e-02 ∆ rsutcs 2e-01 0e+00 0e+00 1e-01 -2e-01 Δ rlutcs rsut – 1e-01 -4e-01 0e+00 00+00 -1e-01 -6e-2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 wet deposition rate dry deposition rate wet deposition rate total deposition rate dry deposition rate of BC - sea of SO2 - sea of SO2 - sea of SO4 - sea of SO4 - sea 1.8e+00 ∆ drybc + wetbc 1.6e + 0.01.5e+00∆ wetso4 ∆ dryso4 0e+00 -2e+00 1.2e+00 5.0e-0 -1e+00 0.0e+00 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 $\frac{1}{3} dryso2 + wetso2)/2 + \frac{1}{3} dryso4 + wetso4)/3$ total deposition rate ambient aerosol optical total cloud cover - sea convective cloud cover - sea surface cloud cover - sea of S - sea thickness at 550nm - sea 0e+000e+00 1e+00 0e+00-2e+01 ∆ od550ae 0e+00 <u>\</u> -1e-01 -4e-01 -4e+01 -1e+00 -1e-01 -8e-01 -2e+00 20002001200220032004 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 ice water path - sea surface concentration column mass burden column mass burden column mass burden of DMS - sea of BC - sea of SO2 - sea of SO4 - sea 5e-01 6e+00 5.0e-01 5e+00 0e+00 0e+00 0.0e+00 8.0e+00 4e+00 oad 3e+00 -5.0e-0-5e-01 -4e-01 2e+00 -1.5e+00 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2000 2001 2002 2003 2004 Year Year Year Year Year

CAM5

CESM1

CESM2

E3SM

GEOS

GFDL

GISS

MIROC

NorESM2

OsloCTM3

UKESM