so2-at-height: percent difference surface flux of SO2 – NH-sea surface concentration of BC – NH–sea surface flux of BC – NH–sea surface concentration of SO4 – NH–sea surface concentration of SO2 – NH–sea 0.25% 10% 6e-06% 7.5% 0% Percent 4e-06% Percent Percent Percent 2e_06% 2.5% -0.5% -20% 0% 0% 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 Year Year Year Year Year upwelling longwave flux at TOA – NH-sea upwelling shortwave flux at TOA – NH-sea upwelling clear-sky longwav flux at TOA - NH-sea net radiative flux incident shortwave flux at TOA - NH-sea at TOA - NH-sea 0.05% 2e-08% 0.6% 0.6% 0% Percent 0.4% Percent Percent 0.4% Percent -0.01% 0.29 0.2 -0.05% -0.02% 0% -08% -0.03% 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 2004 2002 2003 Year Year Year Year Year dry deposition rate of BC – NH–sea upwelling clear-sky shortwave clear-sky net radiative wet deposition rate total deposition rate flux at TOA - NH-sea flux at TOA - NH-sea of BC - NH-sea of BC - NH-sea 0.5% 0.5% 1.5% 1.5% 0.25% 0.5% Percent Percent Percent Percent 1% 0% 0.5% 0.5% -0.5% -0.25% -0.5% 2003 2001 2001 2003 2001 2003 2001 2003 2001 2003 Year Year Year Year Year wet deposition rate of SO4 – NH-sea dry deposition rate wet deposition rate dry deposition rate total deposition rate of SO2 - NH-sea of SO2 - NH-sea of SO4 - NH-sea of S - NH-sea 10% 16% 20% 25% 5% Percent 15% Percent Percent Percent 0% 10% 10% -5% 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 Year Year ambient aerosol optical total cloud cover convective cloud cover thickness at 550nm - NH-se percentage - NH-sea percentage - NH-sea 0.15% 6e+35% 0% 0.05% Percent Percent Percent 4e+35% 0% -40% 2e+35% -0.05% -60% 0% 2002 2002 2002 2003 2001 2003 2004 2001 2003 2004 2001 2004 Year Year Year

MIROC

NorESM2

GFOS

GISS

CFSM1

E3SM

OsloCTM3

UKESM