bc-no-season: percent difference surface concentration of BC – NH–sea surface concentration of SO2 – NH–sea surface flux of BC – NH–sea surface flux of SO2 – NH–sea surface concentration of SO4 – NH–sea 0.3% 0.6% 0.1% 0.2% 0.03% 0.4% 0.1% Percent 0% Percent Percent Percent 0.02% -4% 0% 0.2% -0.1% 0.01% -6% 0% -0.2 0% -0.3% 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 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 0.02% 6e-08% 0.01% 0.025% 0.05% 0.05% Percent Percent -08% Percent 0% 0% 2e-08% -0.01% -0.05% 0% -0.02592001 2003 2001 2003 2001 2003 2001 2002 2003 2004 2001 2002 2003 Year Year Year Year Year dry deposition rate of BC – NH–sea upwelling clear-sky shortway 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 0.05% 0.05% -2 5% 0% Percent 0% -0.05% -0.05% -15% -0.1%-0.1% 2003 2003 2001 2003 2001 2002 2003 2001 2001 2003 2001 2002 Year Year Year Year Year dry deposition rate of SO2 – NH–sea dry deposition rate of SO4 – NH–sea wet deposition rate of SO4 – NH–sea total deposition rate of S – NH–sea wet deposition rate of SO2 - NH-sea 0.2% 0.6% 0.1% 0.8% 0.5% 0.4% Percent Percent Percent Percent -0.19 0.25% 0.2% -0.2% 0% -0.3% -0.3% 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 Year Year Year ambient aerosol optical convective cloud cover total cloud cover percentage - NH-sea percentage - NH-sea 0.2% 250% 0.2% 200% 0.19 0.1% Percent 150% Percent Percent 0% 100% 0% -0.1% 50% 0% 2002 2003 2002 2003 2001 2004 2001 2002 2003 2004 2001 2004 Year Year Year MIROC OsloCTM3 CESM1 **GFDI**

E3SM

GISS

NorESM2