bc-no-season: percent difference surface flux of BC – global surface flux of SO2 – global surface concentration of SO4 – global surface concentration surface concentration of SO2 – global of BC – global 0% 6% 0.15% 0.1% -25% Percent Percent 0.1% Percent Percent Percent 0% 2% 0.05% -75% -0.1% 0% -100% 2001 2003 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 Year Year Year Year Year upwelling longwave flux at TOA – global incident shortwave flux at TOA – global upwelling clear-sky longwav flux at TOA – global net radiative flux upwelling shortwave flux at TOA - global at TOA - global 0.03% 0.1% 0.02% 0.025% 0% 0% 1.5e-08% Percent Percent 0.01% 0% -0.2% 5e-09% -0.2% -0.01% -0.3%0% -0.025% 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 Year Year Year Year Year upwelling clear-sky shortwave clear-sky net radiative dry deposition rate wet deposition rate total deposition rate flux at TOA - global flux at TOA - global of BC - global of BC - global of BC - global 0.2% 0% 0% 0% Percent -0.2% -0.4% -0.4% -3% -6% 2003 2003 2003 2001 2003 2001 2003 2001 2002 2001 2001 2002 Year Year Year Year Year dry deposition rate of SO2 – global dry deposition rate of SO4 – global wet deposition rate of SO4 – global total deposition rate of S – global wet deposition rate of SO2 – global 0.1% 0.8% 0.25% 0.6% 0.05% 0% Percent Percent Percent Percent Percent 0.4% -0.25% 2% 0.2% -0.05% -0.5% 0% 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 convective cloud cover total cloud cover thickness at 550nm - global percentage - global percentage - global 0% 0.1% -20% Percent Percent 0% -40% -0.1% -60% -0.2% 2002 2003 2002 2003 2002 2003 2004 2001 2004 2001 2004 2001 Year Year Year

CFSM1

CESM2

F3SM

GEOS

GFDI

GISS

MIROC

NorESM2

OsloCTM3

UKESM