so2-at-height: percent difference surface flux of SO2 – NH–land surface concentration of BC – NH–land surface flux of BC – NH–land surface concentration of SO4 – NH–land surface concentration of SO2 – NH–land -20% 30% -30% 1e-05% Percent Percent Percent Percent Percent 20% 0% 10% -60% 0% _70% 0% 2003 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2001 2002 2001 2002 2003 Year Year Year Year Year upwelling longwave flux at TOA – NH–land upwelling shortwave flux at TOA – NH–land net radiative flux at TOA – NH–land incident shortwave flux at TOA – NH–land upwelling clear-sky longwav flux at TOA - NH-land 0.6% 0.1% 0.05% 2e-08% 0.4% Percent Percent Percent -0.04% 1e-08% 0% 0.29 0.2% -0.06% 0% -0.05% -0.08%0% _08% 0% 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 2002 2003 Year Year Year Year Year dry deposition rate of BC – NH–land upwelling clear-sky shortwave clear-sky net radiative wet deposition rate total deposition rate flux at TOA - NH-land flux at TOA - NH-land of BC - NH-land of BC - NH-land 1.5% 1.5% 0.5% 0.6% 0.2% 0.4% Percent Percent 0% Percent Percent Percent 0.1% 0.2% 0.5% 0% 0% -0.5% -0.2%-0.1% 0% 0% -0.4%2003 2003 2003 2001 2001 2002 2001 2003 2001 2001 2003 Year Year Year Year Year dry deposition rate of SO4 – NH–land wet deposition rate of SO4 – NH–land total deposition rate of S – NH–land dry deposition rate wet deposition rate of SO2 - NH-land of SO2 - NH-land 40% 30% -30% 30% 30% Percent Percent Percent Percent 10% Percent 20% 20% 20% 0% 10% 10% 10% -50% -10% 0% 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 Year Year Year Year ambient aerosol optical convective cloud cover total cloud cover thickness at 550nm - NH-lan percentage - NH-land percentage - NH-land 2e+36% 0% 0% 1.5e+36% Percent -0.1% Percent -25% 1e+36% -0.2% -0.3% 5e+35% -50% 0% 2002 2002 2003 2002 2003 2001 2003 2004 2001 2004 2001 Year Year MIROC OsloCTM3 CFSM1 **GFOS**

E3SM

GISS

NorESM2

UKESM