high-so4: percent difference surface flux of BC - n-land surface flux of SO2 - n-land surface concentration surface concentration of BC - n-land of SO4 - n-land 1e-05% 18% 5e-06% 0.6% -4.8% 16% Percent 0% Percent Percent Percent 0.4% -4.9% -5e-06% 0.2% -5% 12% -1e-05% 0% -1.5e-05% 2001 2003 2001 2002 2003 2001 2003 2004 2001 2002 2002 2002 2003 Year Year Year Year upwelling longwave flux at TOA – n–land surface concentration upwelling shortwave flux net radiative flux at TOA - n-land of SO2 - n-land at TOA - n-land -4.6% 0.6% 0.05% 0.4% -4 8% Percent 0.3% Percent Percent Percent 0% 0.2% -5% 0.2% -0.05% 0.1% -5.2% -0.1% 0% 0% 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 Year Year Year Year upwelling clear–sky shortwave flux at TOA – n–land clear-sky net radiative flux at TOA - n-land incident shortwave flux upwelling clear-sky longwave at TOA - n-land flux at TOA - n-land 0.25% 0.2% 5e-08% 0% Percent Percent Percent 0.15% 0.15% -0.02% 0% 0.1% -0.04% -5e-08% 0.05% 0.05% 2003 2003 2004 2003 2004 2003 2004 2001 2002 2004 2001 2002 2001 2002 2001 2002 Year Year Year Year dry deposition rate of BC – n–land total deposition rate of BC – n–land dry deposition rate of SO2 – n–land wet deposition rate of BC - n-land 0.25% -4.8% 0.5% 0.5% 0% -4.9% Percent Percent 0% 0% Percent Percent -0.25% -0.5% -0.5% -0.5% -5.1%2001 2002 2003 2004 2001 2002 2003 2004 2001 2003 2004 2001 2002 2002 2003 Year Year Year Year wet deposition rate dry deposition rate wet deposition rate total deposition rate of SO2 - n-land of SO4 - n-land of SO4 - n-land of S - n-land -3% 18% -3.5% 16% Percent Percent -4% Percent 1.5% 14% 3% -4.5% 1% -5% 2% -5.5% 2001 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2002 2003 2004 Year Year Year Year CESM1 E3SM GISS MIROC NorESM2