no-so4: percent difference surface flux of BC - s-land surface flux of SO2 - s-land surface concentration surface concentration of BC - s-land of SO4 - s-land 6e-05% 0.4% 2.25% 4e-05% -3% 0.2% 2% Percent Percent Percent 2e-05% 1.75% 0% 0% -5% 1.5% -0.2% -2e-05% 1 25% 2001 2001 2003 2001 2002 2003 2002 2003 2002 2001 Year Year Year Year upwelling longwave flux at TOA – s-land upwelling shortwave flux at TOA – s–land surface concentration net radiative flux at TOA - s-land of SO2 - s-land 0% 0.15% 0% Percent 0.1% Percent -0.05% 2.1% -0.1% 0.05% 1.9% -0.1% 0% -0.2% -0.05% 2001 2002 2001 2002 2003 2001 2001 2002 Year Year Year Year upwelling clear–sky longwave flux at TOA – s–land upwelling clear–sky shortwave flux at TOA – s–land clear-sky net radiative flux at TOA - s-land incident shortwave flux at TOA - s-land 1e-07% 0.02% 0.025% 5e-08% 0% -0.02% 0.01% Percent 0% -0.025% -0.04%-5e-08% 0% -0.05% -0.06%-1e-07% 2001 2001 2004 2003 2004 2001 2003 2004 2002 2003 2004 2002 2003 2001 2002 2002 Year Year Year Year dry deposition rate of BC – s–land wet deposition rate of BC – s–land total deposition rate of BC – s–land dry deposition rate of SO2 – s–land 0.2% 2.5% 0.25% 2.25% 0% 0% Percent 0% Percent Percent -0.2% -0.25% -0.4% 1.75% -0.4% -0.5% 2001 2002 2003 2004 2001 2003 2004 2001 2003 2004 2001 2002 2002 2002 2003 Year Year Year Year wet deposition rate dry deposition rate wet deposition rate total deposition rate of SO2 - s-land of SO4 - s-land of SO4 - s-land of S - s-land 3% -3% 2% 0% -4% Percent Percent Percent 1% 0% -5% 0% -6% 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