## so2-at-height: percent difference surface flux of SO2 – global surface concentration of BC – global surface flux of BC – global surface concentration of SO4 – global surface concentration of SO2 – global 1.5e-05% 0% 20% 0.2% \_30% 1e-05% 0.1% -20% Percent Percent Percent Percent Percent 5e-06% -50% 0% -20% 0% -40% -60% -0.1% -70% -40% 2003 2001 2002 2003 2001 2002 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year Year upwelling longwave flux at TOA – global upwelling clear–sky longwave flux at TOA – global upwelling shortwave flux net radiative flux incident shortwave flux at TOA - global at TOA - global at TOA - global 2e-08% 0.04% 0% 0% 0.04% 1e-08% Percent 0.02% 0.02% -0.5% -0.5% 0% -1e-08% 0% -0.02% -2e-08% 2002 2003 2001 2002 2003 2001 2002 2003 2004 2001 2002 2003 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 0.6% 0.75% 0% -0.1% 0.49 -0.5% Percent Percent Percent 0.5% $-0.2^{\circ}$ 0.2% 0.25% -0.3% 0% 2003 2003 2003 2003 2003 2001 2002 2001 2001 2001 2001 2002 Year Year Year Year Year dry deposition rate of SO2 – global dry deposition rate of SO4 – global wet deposition rate wet deposition rate total deposition rate of SO2 – global of SO4 – global of S – global 20% -20% -30% 0% -25% Percent Percent Percent -40% -50% -25% -40% -75% -40% -60% 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 Year Year Year Year Year ambient aerosol optical convective cloud cover total cloud cover thickness at 550nm - global percentage - global percentage - global 300% 0% 0.05% 200% Percent Percent Percent -0.1% 0% 100% -0.2% -0.05% -0.3% 0% 2002 2003 2002 2003 2002 2003 2001 2004 2001 2004 2004 2001 Year Year Year NorESM2 CESM1 GISS

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