shp-atl-shift: absolute difference surface flux of BC - global surface flux of SO2 - global surface concentration surface concentration of SO4 - global of BC - global 8 4e-20 4.4e-16 1.5e-13 emiso2 (kg m-2 s-1) 4.7e-20 3.2e-16 emibc (kg m-2 s-1) kg-1) 1.0e-13 mmrbc (kg kg-1) mmrso4 (kg 1.0e-20 1.9e-16 5.0e-14 0.0e+00 -2.7e-20 6.6e-17 -5.0e-14 0e+00 -6.3e-20 -6.0e-1 2000 2001 2002 2003 2000 2001 2002 2003 2000 2001 2002 2003 2004 2000 2001 2002 2003 Year Year Year Year upwelling longwave flux at TOA – global upwelling shortwave flux at TOA – global surface concentration net radiative flux at TOA - global of SO2 - global 5e-12 0.02 0.00 m-2) -0.01 so2 (kg kg-1) rlut (W m-2) rlut + rsut (W 3e-12 0.01 -0.02 -0.02 2e-12 -0.04 -0.03 0.00 1e-12 -0.04 -0.06 -0.01 2000 2001 2002 2003 2000 2001 2002 2000 2001 2002 2003 2000 2001 2002 2003 Year Year Year upwelling clear-sky longwave flux at TOA - global upwelling clear–sky shortwave flux at TOA – global clear-sky net radiative flux at TOA - global incident shortwave flux at TOA - global 0.050 0.012 rlutcs + rsutcs (W m-2) 0.008 0.025 0.010 0.000 rlutcs (W m–2) rsutcs (W m-2) rsdt (W m-2) 0.004 -0.004 0.000 0.000 -0.025 0.000 -0.008-0.004 -0.012 -0.050 -0.0082000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year dry deposition rate of SO2 – global dry deposition rate of BC – global total deposition rate of BC – global wet deposition rate of BC - global 3.0e-17 5.1e-17 7.2e-17 -1.0e-15 drybc + wetbc (kg m-2 s-1) 2.1e-17 1.7e-17 dryso2 (kg m–2 s–1) drybc (kg m-2 s-1) wetbc (kg m-2 s-1) -9.6e-18 6.2e-18 3.3e-18 -1.0e--2.3e-17 -2.4e-2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2000 2001 2002 2003 2000 2001 2002 2003 Year Year Year Year wet deposition rate dry deposition rate wet deposition rate total deposition rate of SO2 - global of SO4 – global of SO4 – global of S - global -3.0e-19 2.8e-15 2.1e-15 (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3 (kg 2.5e-16 wetso2 (kg m-2 s-1) -1.6e-18 dryso4 (kg m-2 s-1) wetso4 (kg m-2 s-1) -2.0e-16 -2 9e-18 1.1e-16 -2.6e-15 4 6e-16 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year CESM1 GISS