## shp-atl-shift: absolute difference surface flux of BC - NH-atlantic surface flux of SO2 - NH-atlantic surface concentration of BC – NH-atlantic surface concentration of SO4 - NH-atlantic 5 90-2 8e-11 3.4e-21 emiso2 (kg m-2 s-1) emibc (kg m-2 s-1) mmrso4 (kg kg-1) 0e+00 mmrbc (kg kg-1) 5e-14 8.1e-22 0e+00 -1.8e-2 -5e-14 -4.3e-2 2000 2002 2003 2000 2001 2002 2003 2004 2000 2001 2002 2003 2000 2001 2002 2003 Year Year Year Year upwelling longwave flux at TOA – NH–atlantic upwelling shortwave flux at TOA – NH–atlantic surface concentration of SO2 – NH–atlantic net radiative flux at TOA - NH-atlantic 0.14 0.12 0.2 so2 (kg kg-1) rsut (W m-2) rlut (W m-2) 0.0 rlut + rsut (W 0.1 0.08 -0.1 3e-11 0.0 0.06 2000 2001 2002 2003 2000 2001 2002 2003 2000 2001 2002 2000 2001 2002 2003 Year Year Year Year upwelling clear-sky longwave flux at TOA - NH-atlantic upwelling clear–sky shortwave flux at TOA – NH–atlantic clear-sky net radiative flux at TOA - NH-atlantic incident shortwave flux at TOA - NH-atlantic 0.050 0.08 0.050 rlutcs + rsutcs (W m-2) 0.025 0.08 rlutcs (W m-2) rsutcs (W m-2) 0.07 rsdt (W m-2) 0.025 0.06 0.000 0.06 0.05 0.000 -0.025 0.04 0.04 -0.025 -0.050 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year wet deposition rate of BC – NH–atlantic dry deposition rate of BC – NH–atlantic total deposition rate of BC – NH–atlantic dry deposition rate of SO2 - NH-atlantic 8.4e-17 1.5e-15 1.4e-15 6.5e-13 drybc + wetbc (kg m-2 s-1) 6.4e-13 wetbc (kg m-2 s-1) dryso2 (kg m-2 s-1) drybc (kg m-2 s-1) 6.3e-13 -1.1e-16 4.7e - 163.5e-16 6.1e-13 -2.0e--1.6e--3.0e-16 -6.7e-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 m-2 s-1) wet deposition rate dry deposition rate wet deposition rate total deposition rate of SO2 - NH-atlantic of SO4 - NH-atlantic of SO4 - NH-atlantic of S - NH-atlantic 7.1e-17 6.0e-13 wetso4)/3 (kg 1.2e-13 4.9e-13 5.5e-13 wetso2 (kg m-2 s-1) 6.9e-17 dryso4 (kg m-2 s-1) wetso4 (kg m-2 s-1) 4.8e-13 1.0e-13 5.0e-13 4.7e-13 + (dryso4 6.7e-17 8.0e-14 4.5e-13 4.6e-13 6.4e-(dryso2 + wetso2)/2 4.0e-13 4.5e-13 6.2e-17 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year

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