## shp-20p-red-1950: absolute difference surface flux of BC – NH–pacific surface concentration of BC – NH–pacific surface concentration surface concentration of SO2 - NH-pacific of SO4 - NH-pacific of SO2 - NH-pacific 1e-05 -6.0e-01 \_1 0e+00 5e-06 ∆ emibc 802 -1.2e+00 -8.0e-01 0e+00 0e+00 -4e+00 -1.0e+00 \_1 8e+00 -1.2e+00 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year upwelling longwave flux at TOA – NH–pacific upwelling shortwave flux at TOA – NH–pacific net radiative flux at TOA – NH-pacific incident shortwave flux at TOA – NH–pacific upwelling clear–sky longwav flux at TOA – NH–pacific 5.0e-02 1e-02 5.0e-02 5e-03 ∆ rlutcs rsut 0.0e + 0.0e +ŧ 0.0e+00 -2 5e-02 -2e-02 -3e-02 -5.0e-02 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year Year clear-sky net radiative implied cloud response dry deposition rate wet deposition rate upwelling clear-sky shortway flux at TOA - NH-pacific flux at TOA - NH-pacific at TOA - NH-pacific of BC - NH-pacific of BC - NH-pacific 4e-01 0e+00 rsutcs) 1e-01 3e-01 2e-01 -1e-02 rsutcs -1e-02 2e-01 rlutcs 1e-01 ∆ wetbc 0e+00 -1e-01 -3e-02 크 -3e-02-2e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 2000 2001 Year Year Year Year Year total deposition rate of BC – NH–pacific dry deposition rate of SO2 – NH–pacific wet deposition rate of SO2 – NH–pacific dry deposition rate of SO4 – NH–pacific wet deposition rate of SO4 – NH-pacific -3e-01 -1.0e+005.0e-01 -5 0e-01 drybc + wetbc -1.0e+00∆ dryso2 2.5e-01 -6e-01 0.0e+00 -6e-01 -2.5e-01 -1.1e+00-7e-01-1.1e+002000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year $\frac{dyso2 + wetso2}{2 + (dyso4 + wetso4)/3}$ total deposition rate Ice water path - NH-pacifiDimethyl sulphide (DMS) mole fraction cloud cover ambient aerosol optical thickness at 550nm - NH-pacific of S - NH-pacific percentage - NH-pacific 2e-0 2e - 02-9.5e-01 -1.0e+00 8 clivi (kg m<sup>-2</sup>) \_lom lom) smb 0e+00 expression cltc -1.0e+00 0e+00 ∆ od550aer 0e+00 -1.1e+00 -1.2e+00 -2e-01 -3e-01 -1.2e+00-4e-02 20002001200220032004 2002 2003 2004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 Year Year Year Year Year load load of so4 - NH-pacific of bc - NH-pacific -2.5e-01 $loadso4 (kg m^{-2})$ 5.0e-0° oadbc (kg m<sup>-2</sup>) -5.0e-01 2.5e-01 -7.5e-01 0.0e+0.0-1.0e+00 -2.5e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year