shp-10p-red: absolute difference surface flux of SO2 – NH–pacific surface flux of BC – NH–pacific surface concentration of BC – NH–pacific surface concentration surface concentration of SO4 - NH-pacific of SO2 - NH-pacific 7.0e-21 $\mathrm{emibc}\,(\mathrm{kg}\,\mathrm{m}^{-2}\,\mathrm{s}^{-1})$ mmrso4 (kg kg – 1) nmrbc (kg kg-1) emiso2 (kg m $^{-2}$ s $^{-1}$ 1e-14 so2 (kg kg – 1) _1 5e_12 -2.0e-12 1.7e-22 -8.7e-14 -8 9e-14 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2002 2003 2004 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 upwelling clear-sky longwav flux at TOA - NH-pacific incident shortwave flux at TOA – NH–pacific 5.0e-02 1.5e-01 5e-02 $rsut(W m^{-2})$ 5 rlut (Wm-2)rsut (Wm-2)0e+00 rsdt (Wm-2)rlutcs (W m-2e - 020e+00 0.0e + 0.0-01 5.0e-02 1e-02 rlut + -5e-02 -2.5e-02 0.0e+00 -1e-0 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 dry deposition rate of BC – NH–pacific wet deposition rate of BC – NH–pacific clear-sky net radiative implied cloud response upwelling clear-sky shortway flux at TOA - NH-pacific flux at TOA - NH-pacific at TOA - NH-pacific rsutcs (W m^{-2}) 1e-01 3e-02 0e+00 lutcs + rsutcs $(W m^{-2})$ 2e-02 5e-02 rsutcs (Wm-2)-6.0e-19 drybc (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1}$ vetbc (kg m⁻² s⁻ -5e-03 1e-02 0e+00 rlutcs 0e+00 -1e-02-1e-02 rsut rit + 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 dry deposition rate of SO4 – NH–pacific total deposition rate of BC – NH–pacific dry deposition rate of SO2 – NH–pacific wet deposition rate of SO2 – NH-pacific wet deposition rate of SO4 – NH-pacific 1.5e-16 -6.0e-14 -8.4e-18 -2.6e-15 $drybc + wetbc (kg \, m^{-2} \, s^{-1})$ wetso2 $(kg m^{-2} s^{-1})$ wetso4 $(kg m^{-2} s^{-1})$ dryso2 (kg m $^{-2}$ s $^{-1}$ dryso4 (kg m⁻² s⁻¹ -6e-14 -2.1e-16 -6.3e-14 -9.0e-15 -3.9e-16 -6.6e-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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - NH-pacifiDimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical thickness at 550nm - NH-pacific of S - NH-pacific percentage - NH-pacific 4e-02 % clivi (kg m⁻²) _lom lom) smb $(kg m^{-2} s^{-1})$ expression cltc od550aer 0e+00 0e+00 0e+00 -5e-04 20002001200220032004 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 Year Year Year Year Year load of so2 – NH-pacific load of bc - NH-pacific 0e+00 -1e-08loadso4 (kg m⁻²) oadbc (kg m⁻² -2e-08 -2e-11 -3e-11 -3e-08 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year