## NH-indian: absolute difference surface flux of BC – shp–20p–red surface flux of SO2 – shp–20p–red surface concentration surface concentration surface concentration of BC - shp-20p-red of SO4 - shp-20p-red of SO2 - shp-20p-red -3e+00 -1.5e+00 0.0e+00 -4e+00 2e-01 5e-06 -5e+00 -2 5e-01 ∆ emibc 0e+00 $\Delta so2$ -2.0e+000e+00 -5.0e-01 -7e+00 -2e-01 -5e-06 \_7 5e\_01 -2.5e+00 -9e+00 -1 0e+00 -1e-05 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 upwelling longwave flux at TOA – shp–20p–red upwelling shortwave flux at TOA – shp–20p–red upwelling clear–sky longwav flux at TOA – shp–20p–red net radiative flux at TOA – shp–20p–red incident shortwave flux at TOA – shp–20p–red 5 0e-02 3e-01 4e-02 1e-01 2e-01 0e+00 0e+00 0.0e + 001e-01 ∆ rlut -1e-01 -01 -2 5e-02 00+00 -2e-01 -2e-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 shortwa flux at TOA - shp-20p-re flux at TOÁ - shp-20p-re at TOA - shp-20p-red of BC - shp-20p-red of BC - shp-20p-red rsutcs) 4e-01 0.0e+00 0.0e+00 2e-01 2e-01 2e-01 1e-01 rlutcs -1e-0 $\Delta$ rsutcs rsu -5.0e-02-5.0e-02 Δ wetbc 0e+00 0e+00 00+00 -1.0e-01 rsut \_01 -1e-01 -1.0e-01 (rlut + -2e-01 -1.5e-01 -4e-01 -1.5e-01 -3e-01 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 total deposition rate of BC – shp–20p–red dry deposition rate of SO2 – shp–20p–red wet deposition rate of SO2 – shp–20p–red dry deposition rate of SO4 – shp-20p-red wet deposition rate of SO4 – shp–20p–red -1.2e+00 -4e-01 -2.5e-01 2e-01 drybc + wetbc ∆ dryso2 ∆ dryso4 -6e-01 0e+00 -1.8e+00 -3.2e+00 -2e-0 -2 0e+00 -7.5e-01 -1e+00 -4e-01 -3.3e+00-2.2e+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 dryso2 + wetso2)/2 + (dryso4 + wetso4)/3Ice water path - shp-20p-Dimethyl sulphide (DMS) mole fraction total deposition rate cloud cover ambient aerosol optical of S - shp-20p-red percentage - shp-20p-re thickness at 550nm - shp-20p-red 2e+00 -2.6e+001.5e + 0.01e+00 8 1.0e+00 clivi (kg m<sup>-2</sup>) \_lom lom) smp -2.8e+00-2e-02 expression cltc ∆ od550ae 0e+00 5.0e-01 -3.0e+00 -4e-02 0.0e+00 -1e+00 -3.2e+00 -2e+00 20002001200220032004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year Year load load of so4 - shp-20p-red of bc - shp-20p-red loadso4 (kg m<sup>-2</sup>) loadbc (kg m $^{-2}$ ) -6e-01 -2e-01-9e-01 4e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year