so2-at-height: percent difference surface flux of SO2 – NH–indian surface concentration of BC – NH–indian surface flux of BC – NH–indian surface concentration of SO4 – NH-indian surface concentration of SO2 – NH–indian 50% 0.5% 20% 20% 3e-06% 40% 15% ∆ emibc ∆ mmrbc 0% $\Delta so2$ 0% 30% -0.5% -20% -3e-06% 10% 0% 2001 2002 2003 2001 2002 2003 2001 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year Year shortwave flux at TOA – NH–indian net radiative flux at TOA – NH-indian clear-sky longwave flux at TOA - NH-indian longwave flux at TOA incident shortwave flux NH-indian at TOA - NH-indian 2e-07% 0.05% 1e-07% 0.025% 0.1% ∆ (rlut + rsut) 0% ∆ rlut 0% 0.5% 0.5% -1e-07% -0.025% -2e-07% 0% -0.1% 0% -0.05% 2001 2003 2001 2003 2001 2003 2002 2003 2003 2004 Year Year Year Year Year clear-sky shortwaveflux clear-sky net radiative implied cloud response dry deposition rate wet deposition rate at TOA - NH-indian flux at TÓA - NH-indian at TOA - NH-indian of BC - NH-indian of BC - NH-indian 4% Δ (rlut + rsut - rlutcs - rsutcs) 0% 3% ∆ (rlutcs + rsutcs) 3% 0.5% ∆ rsutcs △ wetbc △ drybc 2% 0% 0% 0% 0% 2001 2002 2003 2001 2003 2001 2002 2003 2001 2003 2001 2003 Year Year Year Year Year total deposition rate of BC – NH–indian wet deposition rate of SO4 – NH–indian dry deposition rate wet deposition rate dry deposition rate of SO2 - NH-indian of SO2 - NH-indian of SO4 - NH-indian 20% 40% 50% ∆ (drybc + wetbc) 30% 2% 10% 40% ∆ dryso2 ∆ wetso2 ∆ wetso4 ∆ dryso4 30% 20% 1% 20% 20% 0% 10% -10% 10% 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 2001 2002 2003 2004 Year total deposition rate of S – NH–indian $\Delta (dryso2 + wetso2)/2 + (dryso4 + wetso4)/3$ ambient aerosol optical convective cloud cover total cloud cover thickness at 550nm - NH-indi percentage - NH-indian percentage - NH-indian 50% 0.5% 0% 40% ∆ od550aer 0% 30% -25% -0.5% 2e+35% -50% 10% 0% -75% 2002 2002 2003 2001 2003 2001 2003 2004 2002 2003 2004 2001 2004 2002 2004 2001

Year

MIROC

NorESM2

Year

Year

CFSM1

E3SM

GFOS

GISS

Year

OsloCTM3

UKESM