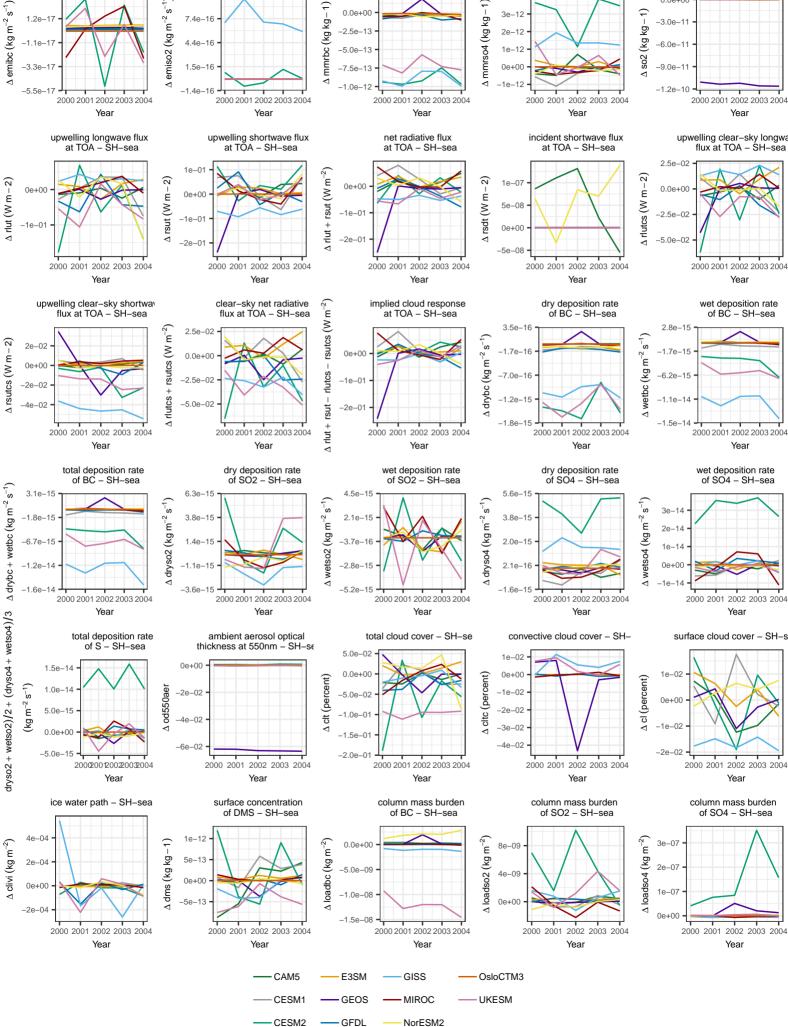
bc-no-season: absolute difference surface concentration of SO4 – SH–sea surface flux surface concentration surface concentration of SO2 - SH-sea of BC - SH-sea of SO2 - SH-sea 1.0e-15 0.0e+00 emiso2 $(kg m^{-2} s^{-1})$ ∆ mmrso4 (kg kg −1) 0.0e+00 (kg kg - 1)36-12 ka ka--3 0e-11 2e-12 4.4e-16 _6 0e_1 ∆ mmrbc (∆ so2 (1.5e-16 0e+00 _9 0e_11 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year upwelling shortwave flux at TOA – SH-sea upwelling clear–sky longwa flux at TOA – SH–sea net radiative flux incident shortwave flux at TOA – SH-sea at TOA - SH-sea ∆ rlut + rsut (W m⁻ Δ rlutcs (W m-2) 1e-07 0.0e+00 rsdt (W m-0e+00 56-08 -1e-01 -1e-01 0e+00 -2e-01 -2e-01 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year clear-sky net radiative flux at TOA - SH-sea dry deposition rate of BC – SH–sea wet deposition rate of BC – SH–sea rsutcs (W m^{-2}) implied cloud response at TOA - SH-sea 3.5e-16 2.8e-15 drybc (kg m⁻² s^{-'} 0e+00 wetbc (kg m⁻² rlutcs--2.5e-02 -1e-01 -5.0e-02 -2e-01 rsut rlut + 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 dry deposition rate of SO4 – SH–sea dry deposition rate of SO2 – SH–sea wet deposition rate of SO4 – SH-sea wet deposition rate of SO2 - SH-sea wetso2 (kg m⁻² s⁻ dryso4 (kg m⁻² s⁻ wetso4 (kg m^{-2} s $^-$ 3.8e-15 3.8e-15 1.4e-15 2.0e-15 -3.6e-15 -1.6e-15 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year ambient aerosol optical total cloud cover - SH-se convective cloud cover - SHsurface cloud cover - SH-se thickness at 550nm - SH-se 5.0e-02 (percent) (percent) (percent -5.0e-02 -2e-02 ∆ cltc ∆ clt ۷ دا (-4e-02 -3e-02 -6e-022000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 2000 2001 2002 2003 2004 Year Year Year Year surface concentration column mass burden column mass burden column mass burden of BC - SH-sea of SO4 - SH-sea



surface flux

of BC - SH-sea

3.4e-17