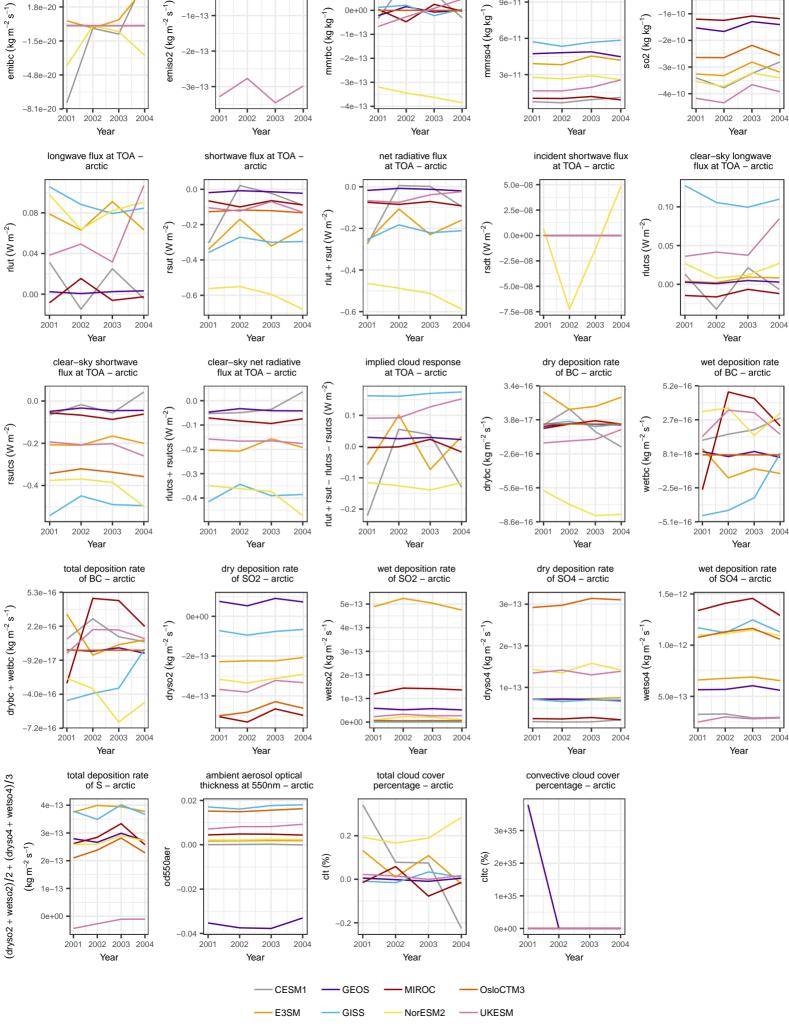
so2-at-height: absolute difference surface flux of SO2 – arctic surface concentration of SO4 – arctic surface concentration surface concentration of SO2 – arctic 0e+00 0e+00 1e-13 emiso2 $(kg m^{-2} s^{-1})$ mmrbc (kg kg⁻¹) mmrso4 (kg kg⁻ so2 (kg kg⁻¹ -1e-13 _2e_13 2001 2002 2003 2001 2002 2003 2001 2002 2003 2001 2002 2003 Year Year Year Year net radiative flux at TOA – arctic clear-sky longwave flux at TOA - arctic shortwave flux at TOA incident shortwave flux at TOA - arctic arctic 5.0e-08 0.0 0.10 2.5e-08 rlut + rsut $(W m^{-2})$ rlutcs $(W m^{-2})$ sdt (W m⁻²) 0.05 -0.4 -0.4 -5.0e-08 -0.6 2001 2002 2003 2001 2003 2003 2001 2003 Year Year Year Year clear-sky net radiative implied cloud response dry deposition rate wet deposition rate flux at TOA - arctic at TOA - arctic of BC - arctic of BC - arctic 3.4e-16 5.2e-16 rlut + rsut - rlutcs - rsutcs (W m⁻²) 0.0 3.8e-17 drybc $(kg m^{-2} s^{-1})$ wetbc $(kg m^{-2} s^{-1})$ -0.1 0.0 -0.2 -2.6e-16 -0.3 -0.1 -0.4 -8 6e-16 2003 2001 2003 2001 2003 2001 2002 2001 2003 Year Year Year Year dry deposition rate of SO4 – arctic wet deposition rate of SO4 – arctic dry deposition rate wet deposition rate of SO2 - arctic of SO2 - arctic wetso2 $(kg m^{-2} s^{-1})$ $dryso4 (kg m^{-2} s^{-1})$ wetso4 $(kg m^{-2} s^{-1}$ 1 0e-12 3e-13 2e-13 0e+00 2001 2002 2003 2004 2001 2002 2003 2001 2002 2003 2001 2002 2003 2004 Year ambient aerosol optical total cloud cover convective cloud cover percentage - arctic percentage - arctic 0.02 3e+35 0.2 0.00



surface flux of BC -

-1.5e-20

-4.8e-20

arctic