Summary - percent difference surface flux of BC - NH-land surface flux of SO2 - NH-land 8% 0.2% 4% Δ emibc ∆ emiso2 0% 0% -4% -0.2% -8% surface concentration of BC - NH-land surface concentration of SO4 - NH-land 4% 20% 2% ∆ mmrbc ∆ mmrso4 0% 0% -2% -20% -4% surface concentration of SO2 - NH-land surface concentration of DMS - NH-land 4% 100% 2% 50% ∆ dms $\Delta \, \text{so2}$ 0% 0% -50% -2% -100% ▲ CAM5 E3SM GISS OsloCTM3

CESM1

• CESM2

GEOS

• GFDL

MIROC

NorESM2

UKESM

Summary - percent difference column mass burden of SO4 - NH-land column mass burden of SO2 - NH-land 40% 50% 20% 25% ∆ loadso4 ∆ loadso2 0% 0% -25% -20% -50% -40% column mass burden of BC - NH-land SO4 lifetime - NH-land 6% 15% $\Delta \log 4/(dryso4 + wetso4)$ 10% 3% Δ loadbc 5% 0% 0% -3% -5% -6% -10% sol at hot no 50^A SO2 timescale - NH-land 1e+07% ∆ loadso2/emiso2 5e+06% 0% -5e+06% -1e+07% righ so A no 304 OsloCTM3 ▲ CAM5 E3SM GISS

CESM1

• CESM2

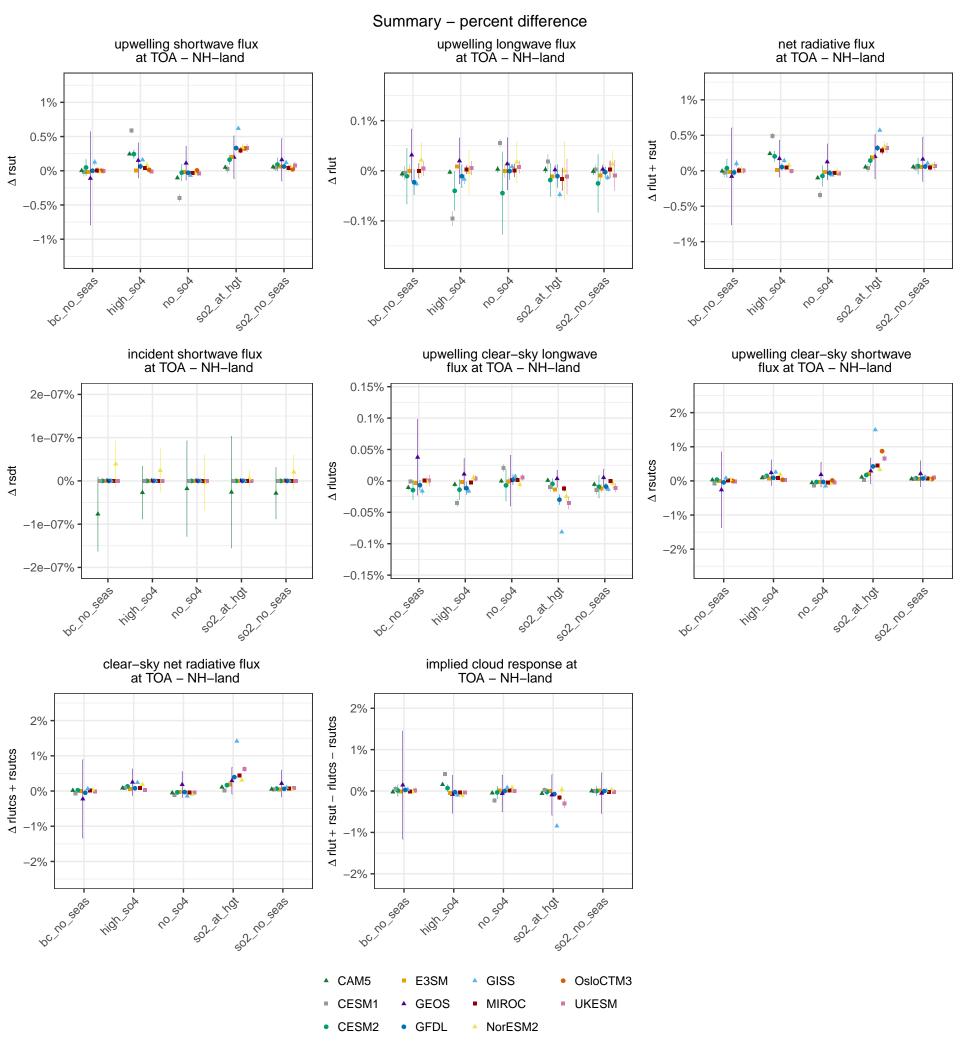
GEOS

• GFDL

MIROC

NorESM2

UKESM



Summary - percent difference ambient aerosol optical thickness at 550nm – NH–land total cloud cover - NH-land 0.5% 40% Δ od550aer $\Delta \, \text{clt}$ 0% 0% -0.5% -40% convective cloud cover - NH-land surface cloud cover - NH-land 4% 0.5% Δ cltc ∆ cl 0% 0% -0.5% -4% pc no seas ice water path - NH-land 1% ∆ clivi -1% E3SM OsloCTM3 ▲ CAM5 GISS CESM1 GEOS MIROC UKESM • CESM2 • GFDL NorESM2

