Summary - percent difference surface flux of BC - SH-land surface flux of SO2 - SH-land 0.4% 4% ∆ emiso2 Δ emibc 0% 0% -4% -0.4% surface concentration of BC - SH-land surface concentration of SO4 - SH-land 20% 3% 10% Δ mmrbc ∆ mmrso4 0% -10% -3% -20% surface concentration of SO2 - SH-land surface concentration of DMS - SH-land 4% 100% 2% 50% $\Delta \, \mathsf{dms}$ $\Delta \, \text{so2}$ 0% 0% -50% -2% -100%

▲ CAM5

CESM1

• CESM2

E3SM

GEOS

• GFDL

GISS

MIROC

NorESM2

OsloCTM3

UKESM

Summary - percent difference column mass burden of SO4 - SH-land column mass burden of SO2 - SH-land 20% 20% 10% 10% ∆ loadso4 ∆ loadso2 0% 0% -10% -10% -20% -20% column mass burden of BC - SH-land SO4 lifetime - SH-land 20% $\Delta \log 4/(dryso4 + wetso4)$ 100% 10% Δ loadbc 0% 0% -10% -100% -20% 40 10 3 8835 7030A SO2 timescale - SH-land 4e+08% ∆ loadso2/emiso2 0% -4e+08% OsloCTM3 ▲ CAM5 E3SM GISS

CESM1

• CESM2

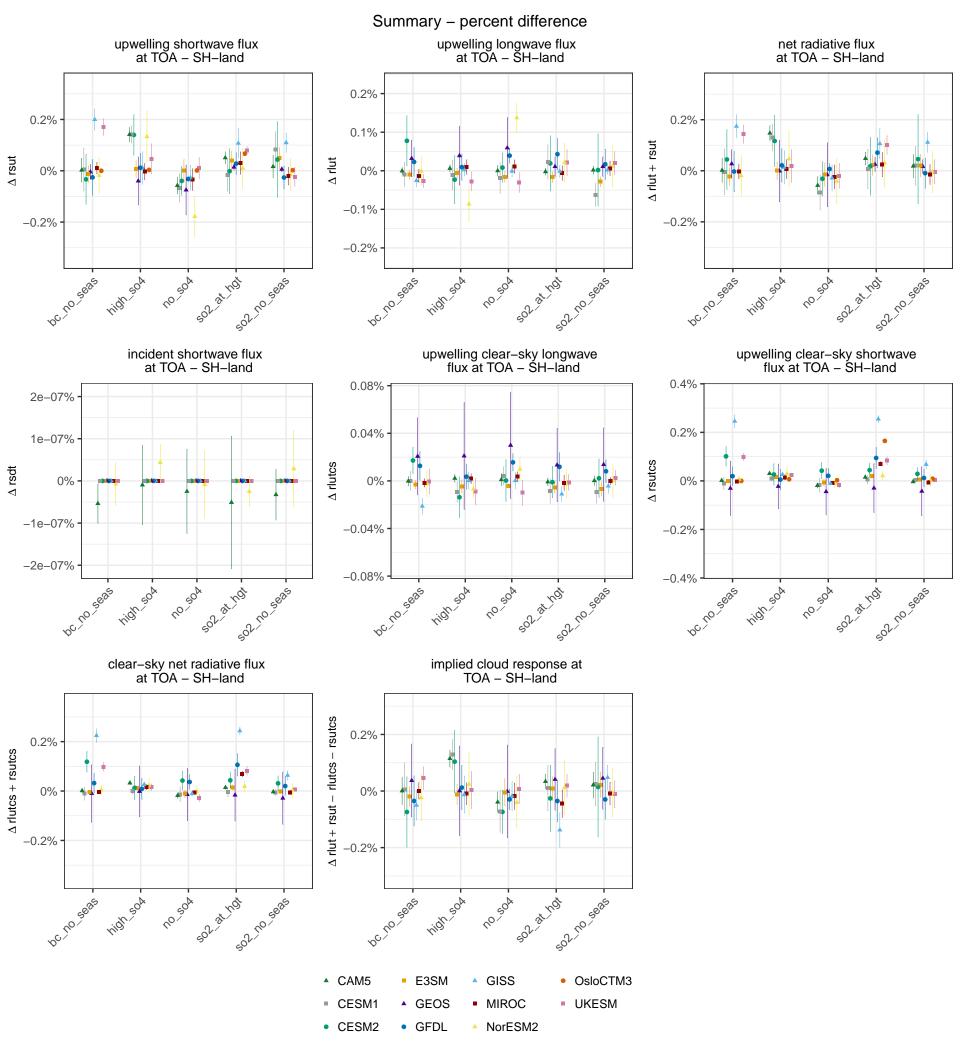
GEOS

• GFDL

MIROC

NorESM2

UKESM



Summary - percent difference ambient aerosol optical thickness at 550nm – SH–land total cloud cover - SH-land 80% 0.4% 40% ∆ od550aer $\Delta \, \text{clt}$ 0% 0% -0.4% -40% -80% convective cloud cover - SH-land surface cloud cover - SH-land 2% 1% 1% 0.5% Δ cltc ∆ cl 0% 0% -0.5% -1% -1% -2% ice water path - SH-land 2% 1% ∆ clivi 0% -1% -2% 10 50A E3SM OsloCTM3 ▲ CAM5 GISS CESM1 GEOS MIROC UKESM

• CESM2

• GFDL

NorESM2

