#### 2nd Model Layer Summary: SO2-at-height (absolute difference) surface flux of BC - global surface flux of SO2 - global 1.2e-19 2e-13 6.1e-20 $\Delta$ emiso2 (kg $\mathrm{m}^{-2}\,\mathrm{s}^{-1})$ $\Delta$ emibc (kg $\mathrm{m}^{-2}~\mathrm{s}^{-1})$ 0.0e+00 0e+00 -6.1e-20 -2e-13 -1.2e-19 50 100 150 50 100 150 Second Layer (m) Second Layer (m) surface concentration of BC - global surface concentration of SO4 - global 2e-12 2e-10 $\Delta$ mmrso4 (kg kg – 1) $\Delta$ mmrbc (kg kg-1) 1e-12 1e-10 0e+00 0e+00 -1e-10 1e-12 -2e-10 -2e-12 50 100 150 50 100 150 Second Layer (m) Second Layer (m) surface concentration of SO2 - global surface concentration of DMS - global 1e-12 5e-10 5e-13 $\Delta$ dms (kg kg – 1) $\Delta \cos (kg kg - 1)$ 0e+00 0e+00 lack-5e-13 -5e-10 -1e-12 50 100 150 50 100 150 Second Layer (m) Second Layer (m) CAM-ATRAS E3SM GISS modelE OsloCTM3 CESM **GEOS** MIROC-SPRINTARS UKESM1 GFDL-ESM4 CESM2 NorESM2







