



Supplement of

Assessment of an updated polar stratospheric cloud parameterisation for the UK Earth System Model (UKESM1.1) within the UK Met Office Unified Model (v13.9) using CALIOP and MLS observations

Isabelle Sangha et al.

Correspondence to: Isabelle Sangha (is568@cam.ac.uk)

The copyright of individual parts of the supplement might differ from the article licence.

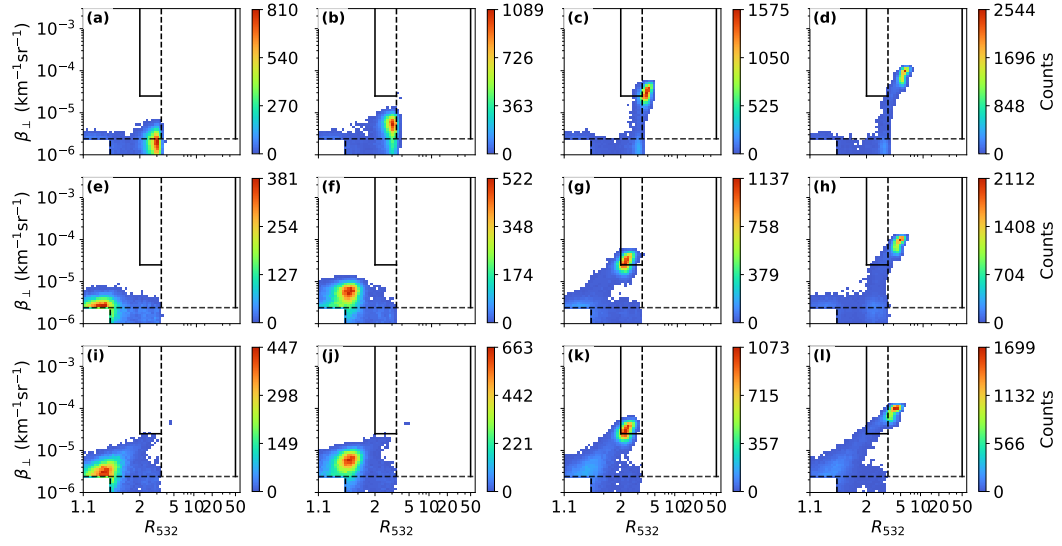
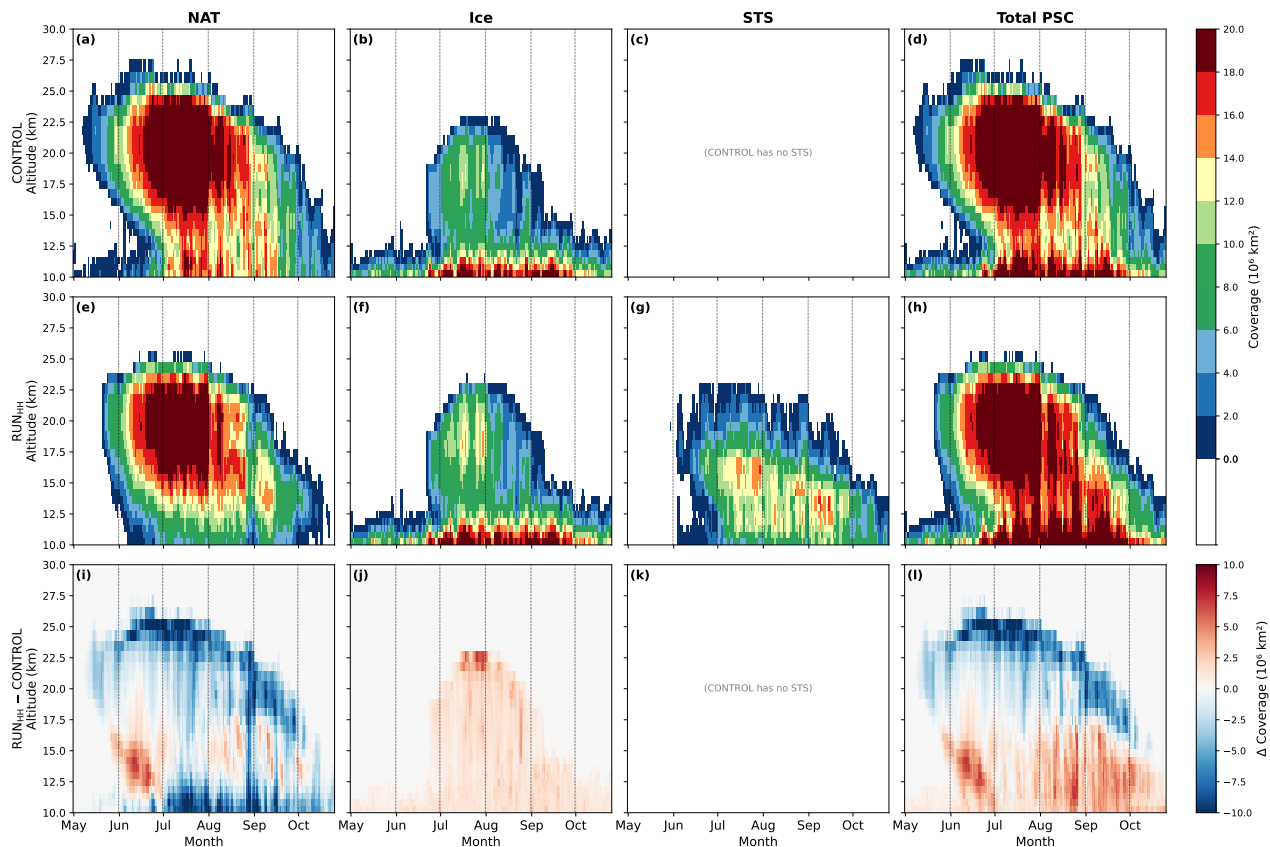


Figure S1. As Fig. 1 but showing the 2D histogram of optical properties from all the sensitivity simulations RUN1–RUN12 (a–l, respectively).



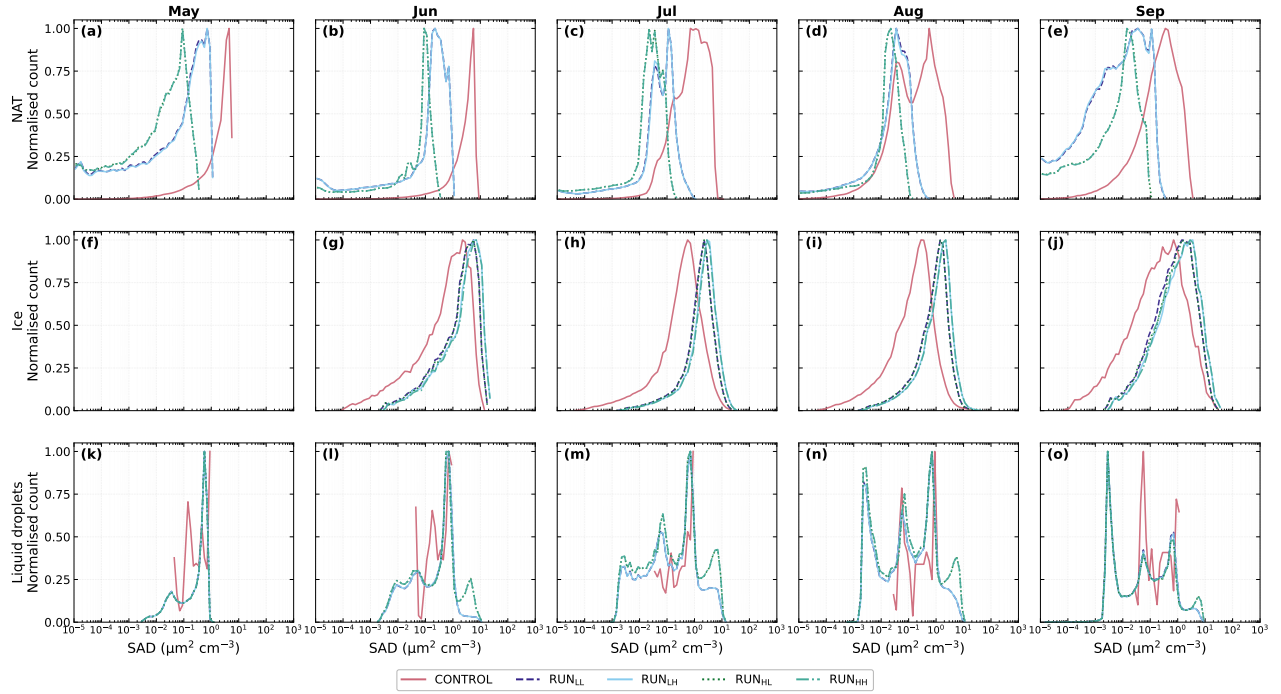


Figure S3. Distribution of SAD ($\mu\text{m}^2 \text{cm}^{-3}$) for NAT (a-e), ice (f-j) and liquid droplets (STS and sulphate aerosols, k-o) for CONTROL and RUN_{LL}, RUN_{LH}, RUN_{HL}, and RUN_{HH} for the Antarctic for each month of the extended 2008 winter season (May to September), across the latitude band 65°S – 90°S .

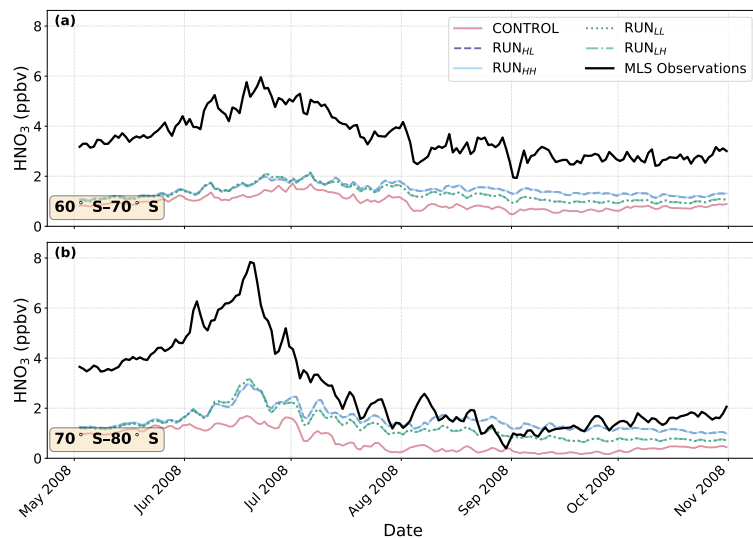


Figure S4. As Fig. 6, but at 100 hPa.

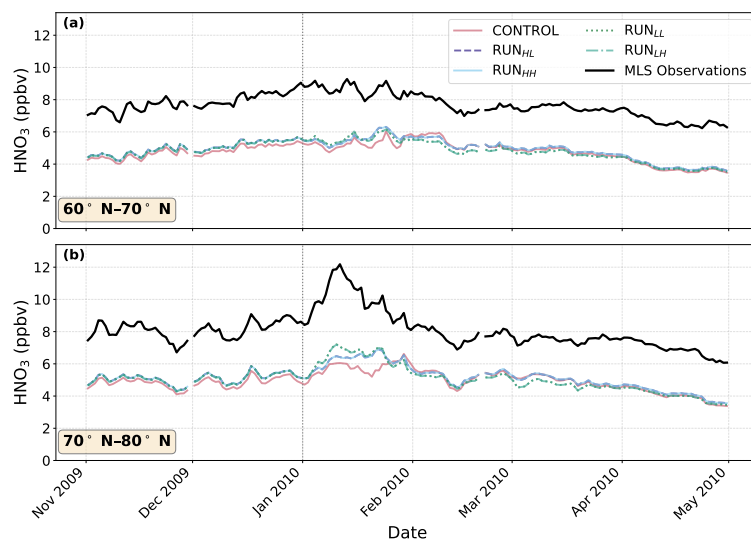


Figure S5. As Fig. 6 but for Arctic over the extended 2009/2010 winter season (November to May), averaged across latitude bands 60°N–70°N (a), and 70°N–80°N (b).

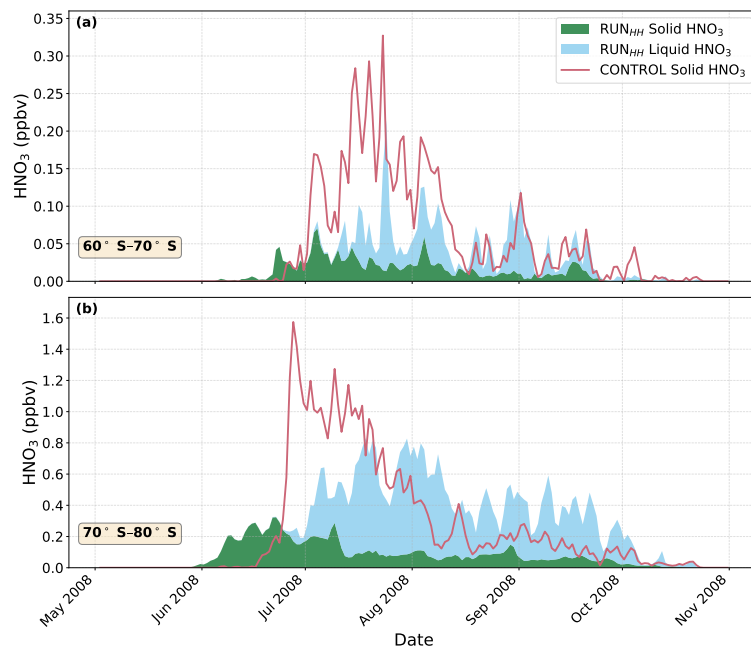


Figure S6. As Fig. 7, but at 100 hPa.

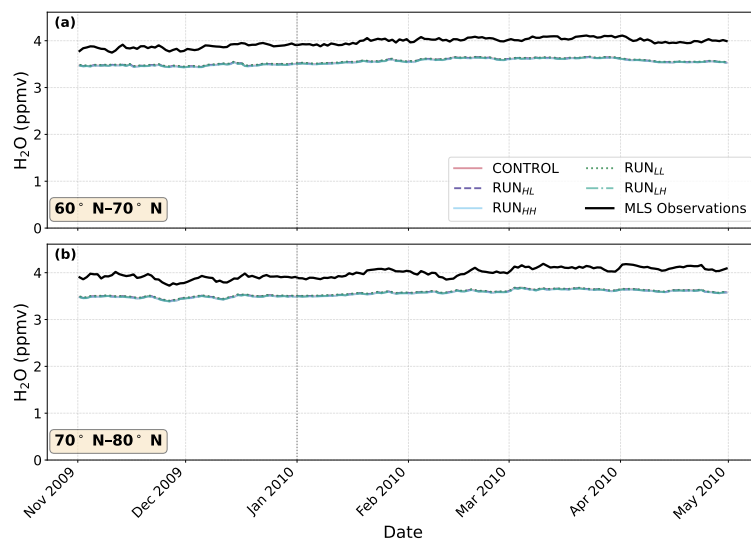


Figure S7. As Fig. S5, but for zonal mean gas-phase H_2O (ppmv). Note that there is complete overlap of all model runs (CONTROL and sensitivity simulations).

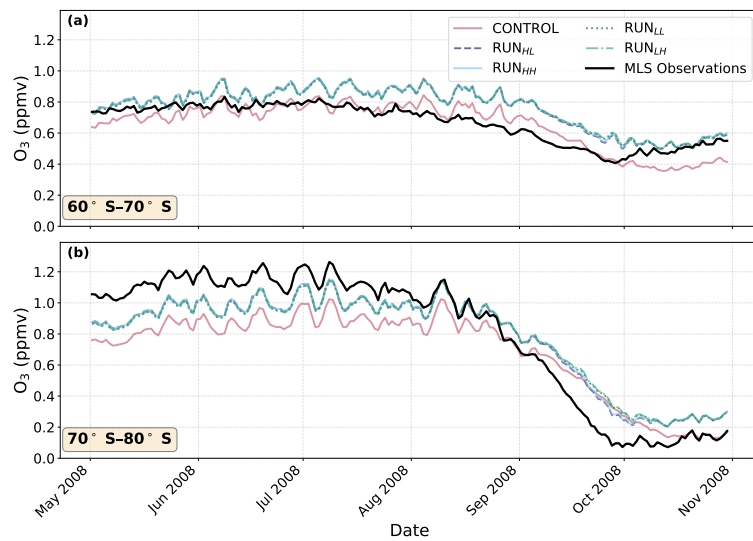


Figure S8. As Fig. 9, but at 100 hPa.