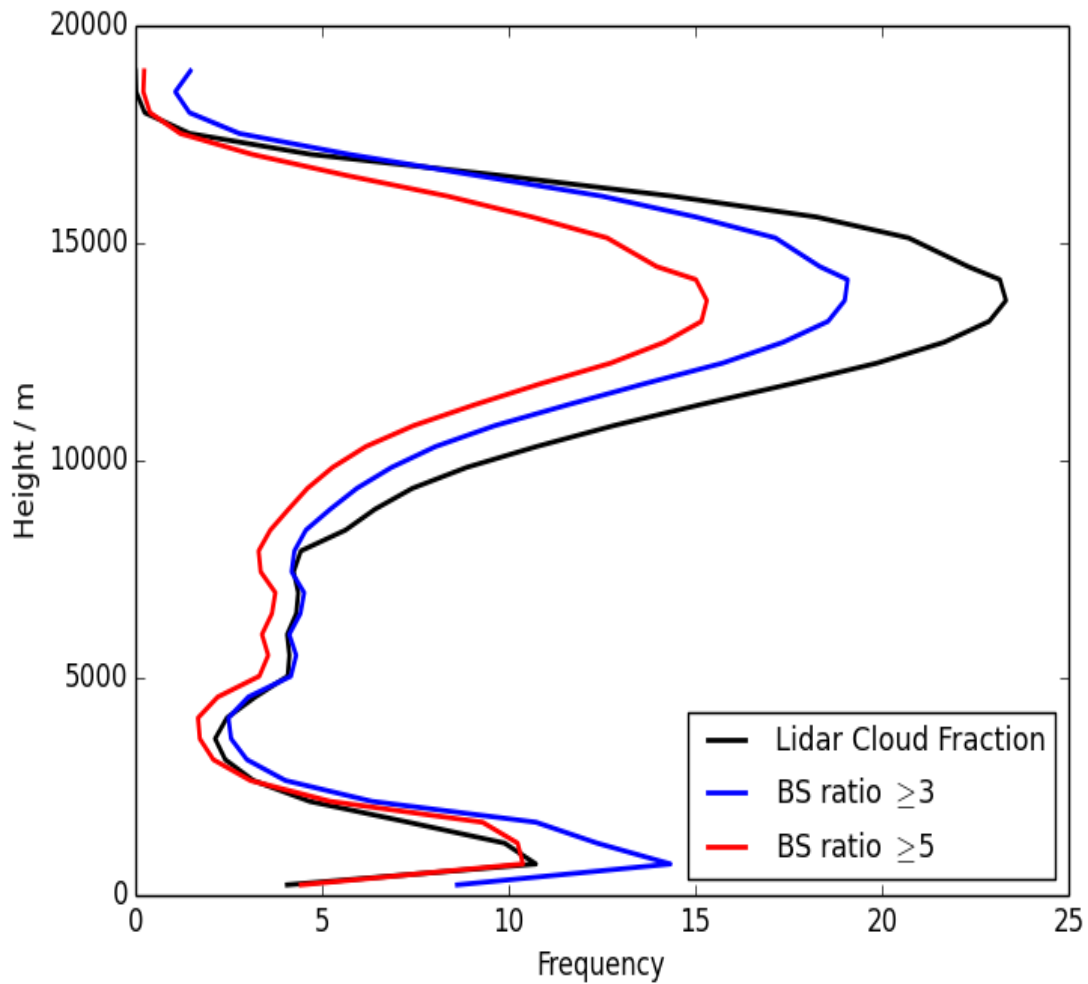


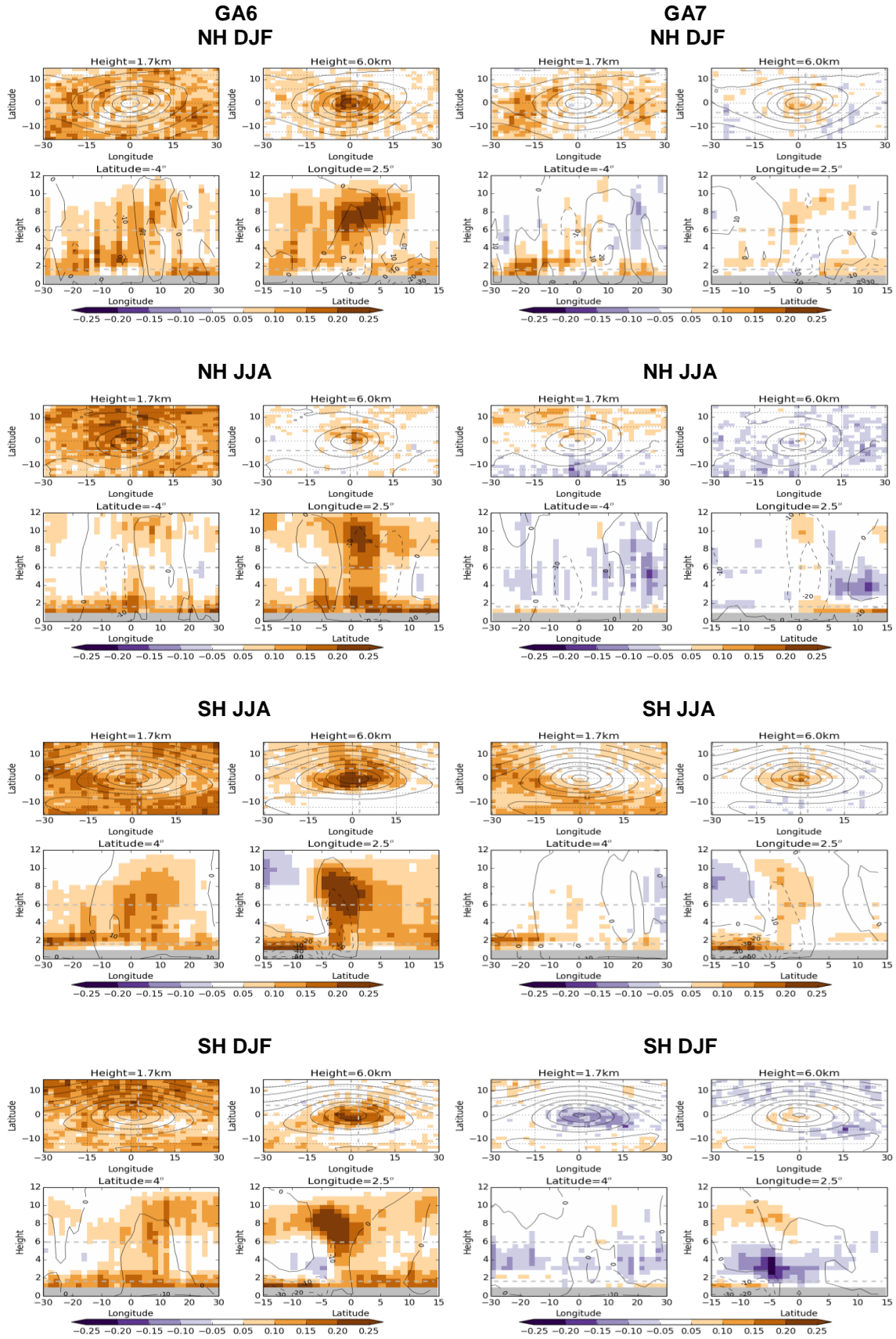
# A multi-diagnostic approach to cloud evaluation

K.D. Williams and A. Bodas-Salcedo

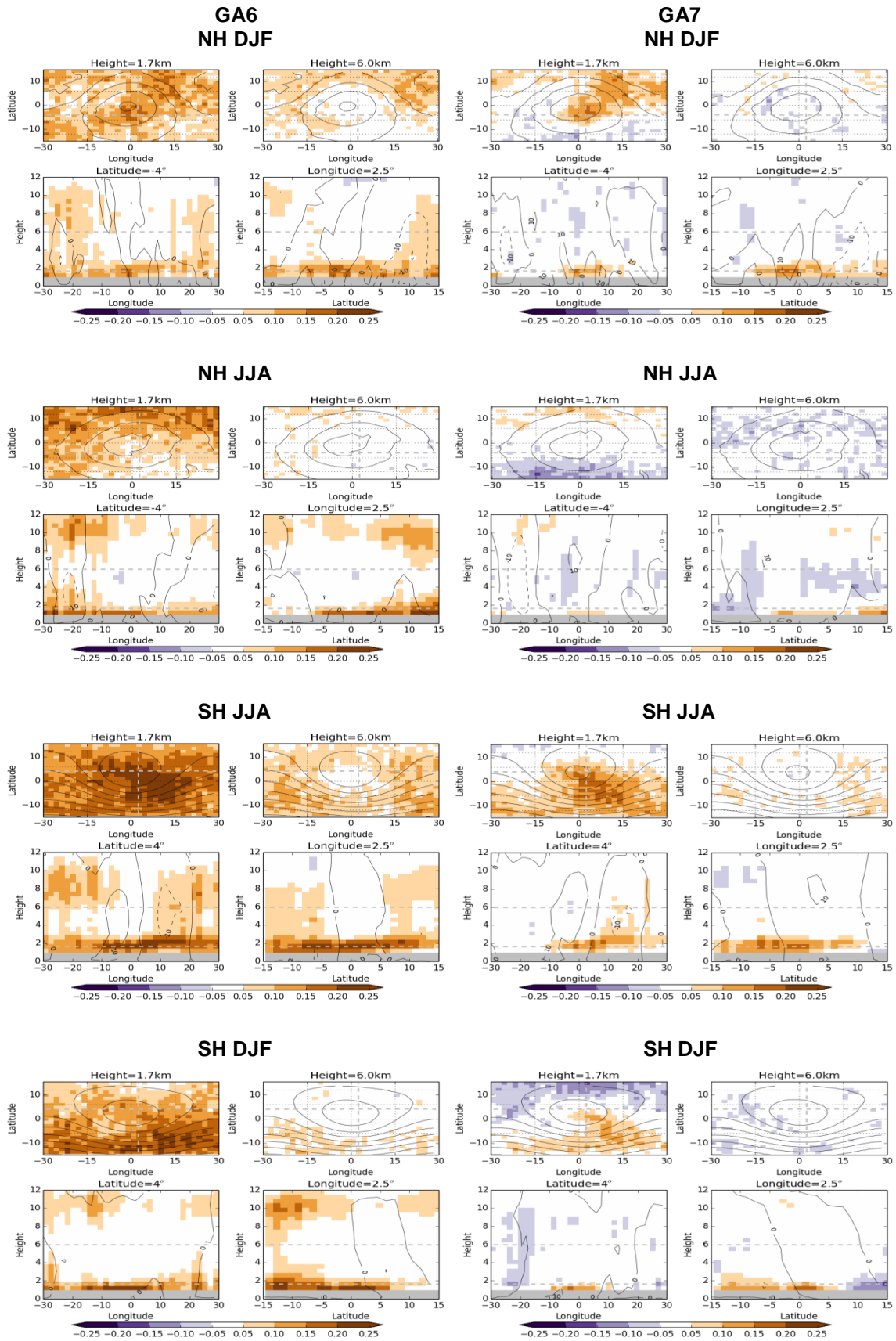
## Supplementary material



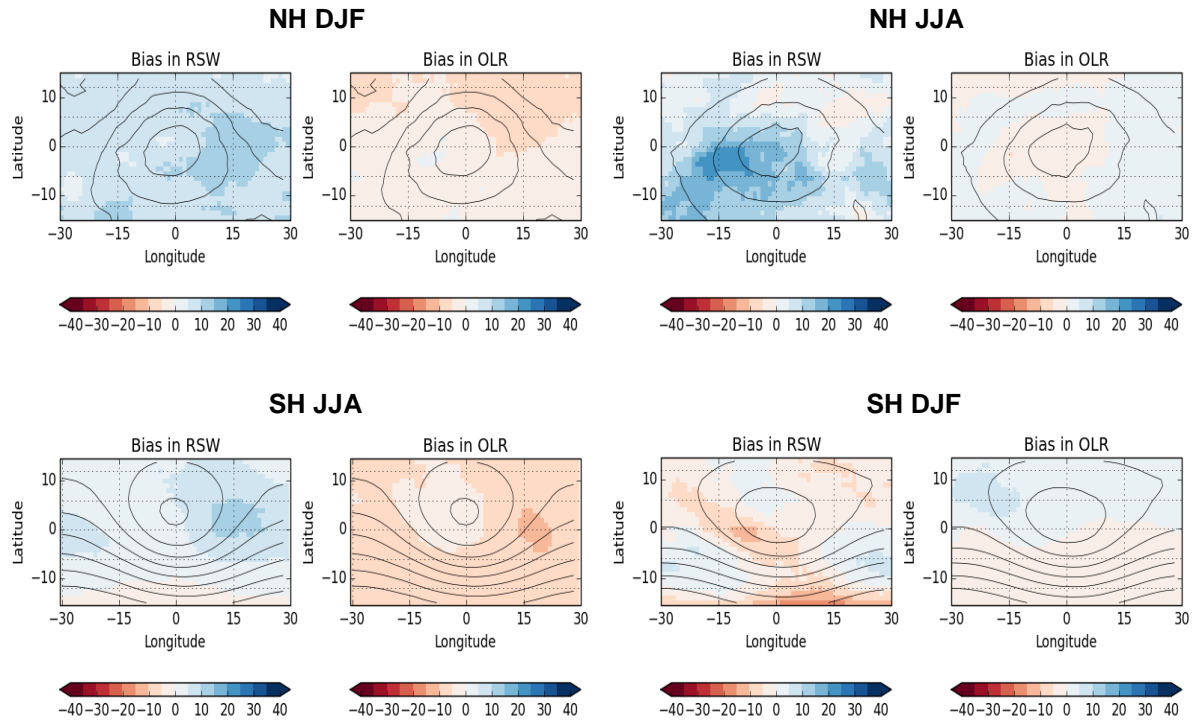
Supplementary figure 1: CALIPSO observed height—cloud frequency histograms for the tropics (20°N-20°S). Black is the lidar cloud fraction obtained from the RL-GEOPROF product (and thus is based on the lidar cloud detection algorithm). Blue and red are obtained from CALIPSO height—backscatter ratio histograms by adding together the backscatter ratio bins  $\geq 3$  and  $\geq 5$  respectively.



Supplementary figure 2: Cloud fraction bias for GA6 (left) and GA7 (right) composite cyclones (as per Figure 7 in main paper). From top to bottom are northern hemisphere winter, northern hemisphere summer, southern hemisphere winter and southern hemisphere summer.



Supplementary figure 3: As Supplementary figure 2 but for anticyclones.



Supplementary figure 4: RSW and OLR bias for GA7 composite anticyclones (as per Figure 9 in main paper).