



Supplement of

Implementation of predicted rime mass in the bin microphysics scheme DESCAM 3D: evaluation for an idealized squall line system and a heavy snowfall event during ICE-POP 2018

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S1 X band radar reflectivity at MHS: observation and simulations

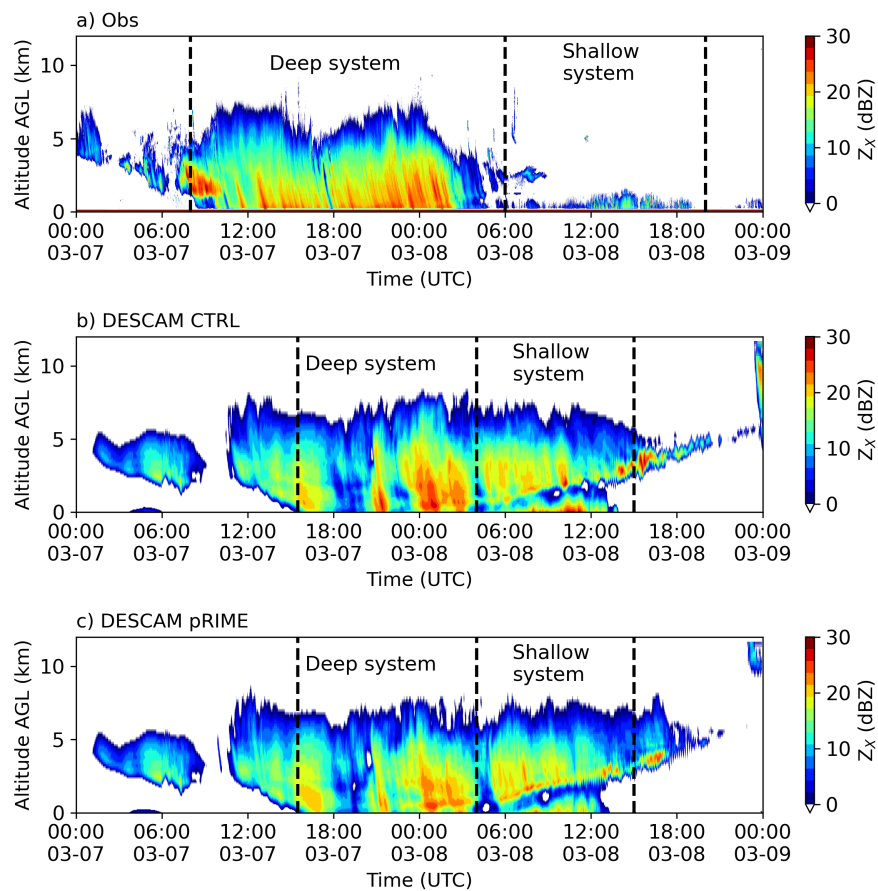


Figure S1. Time-height (above ground level) evolution of X-band radar reflectivity at the MHS station: a) observations, b) DESCAM CTRL simulation, c) DESCAM pRIME simulation. Dashed lines indicate the limits of the different cloud systems.

S2 X band radar reflectivity statistics at MHS: deep and shallow systems

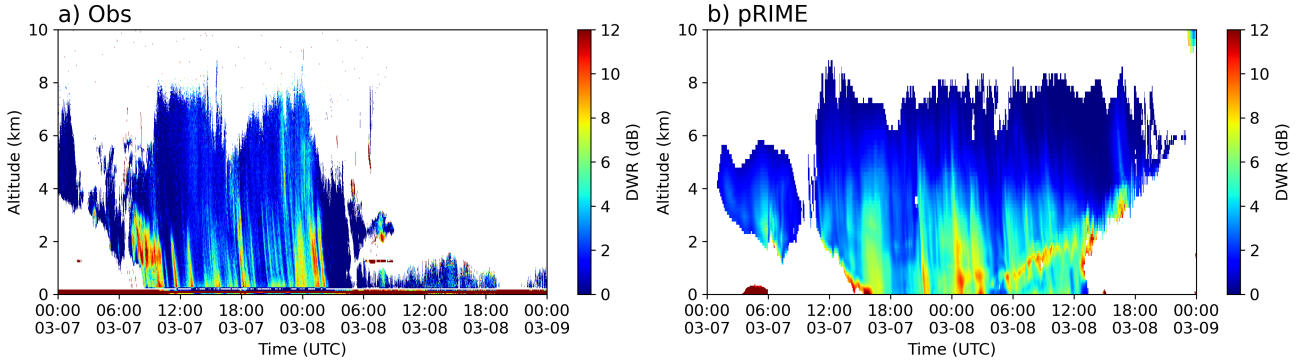


Figure S2. Radar dual wavelength ratio (DWR) between the X and W band (i.e. $Z_X - Z_W$) for a) radar observations and b) DESCAM pRIME simulation. Only values corresponding to $Z_X > -3$ dBZ are shown.

5 S3 X band radar reflectivity statistics at MHS: deep system

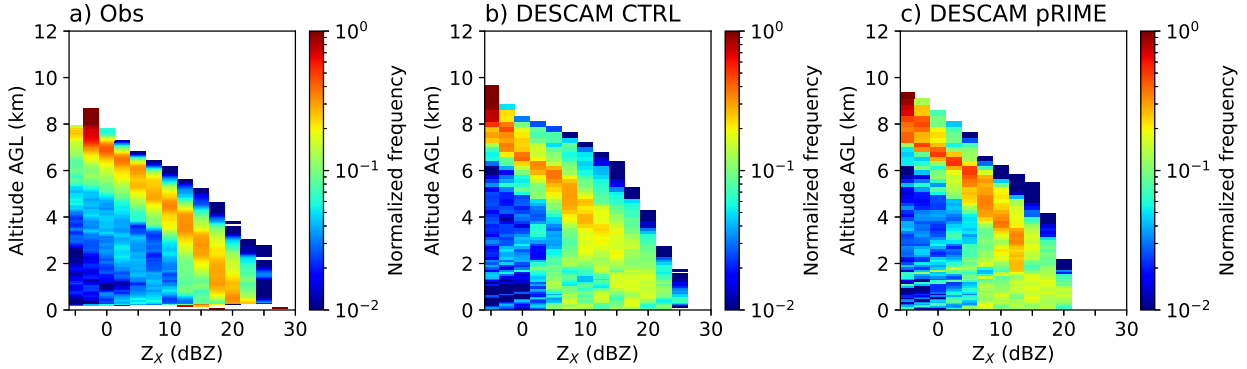


Figure S3. Frequency of X-band radar reflectivity as function of the altitude above ground level for the deep cloud system with: a) observations b) DESCAM CTRL simulation c) DESCAM pRIME simulation.

S4 W band radar reflectivity statistics at MHS: shallow systems

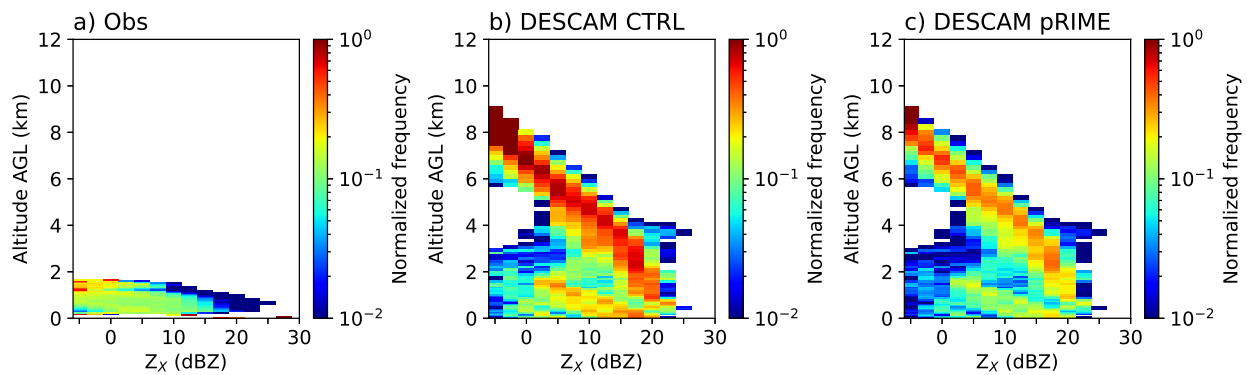


Figure S4. As Fig. S3 but for the shallow cloud system