Description of the Data Used to Generate Figure 9:

The simulations were generated using different kernel configurations of a one-dimensional bin-microphysical model. The model and its variants (kernel formulations) have been described in the literature in Prat and Barros (2007a,b) and Prat et al. (2012). The combinations of coalescence and breakup kernel formulations (with collision-coalescence, collisional breakup, and sedimentation as the only processes included) includes the following formulations for coalescence efficiency-breakup kernels: (case 1) LL82-MF04, (case 2) St10-MF04, (case 3) Se05-MF04, and (case 4) Se05-MF04 with PBT12 for coalescence-breakup regime delineations. Here LL82 [Low and List, 1982b], MF04 [McFarquhar, 2004], St10 [Straub et al., 2010], Se05 [Seifert et al., 2005], and PBT12 [Prat et al., 2012] are the specific formulations tested.

The figures display the transient evolution of the drop number concentration (M_0 in cm^{-3}), radar reflectivity (Z in dBz), and mass-weighted mean drop diameter (D_m in mm) at 3-minute (Fig 9a) and at the end of an 1-hour simulation (Fig. 9b). The figures (Figure 9a and Figure 9b) were generated using a Matlab code. The four ascii files (one file for each case) has 87 columns (C1-C87) described as follows: C1: time (sec); C2: height above ground level (m): C3: drop number concentration (M_0 in cm^{-3}); C4: liquid water content (LWC); C5: rain rate (RR in mm/h); C6: radar reflectivity (Z in dBz); C7: mass-weighted mean drop diameter (D_m in mm); C8-C47: drop size distribution at each one of the 40-bin (in cm^{-3}); C48-C87: drop size distribution at each one of the 40-bin (in cm^{-4}). The top line describes the initial conditions at the top of the 3-km column (vertical resolution of 10-m). Vertical profiles of the different integral properties and drop size distributions are extracted at 61 time steps (from t=0- to 3600-sec).