Supporting Information for

Comprehensive Quantification of Height Dependence of Entrainment-Mixing between Stratiform Cloud Top and Environment

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Contents of this file:

Figures S1 to S13

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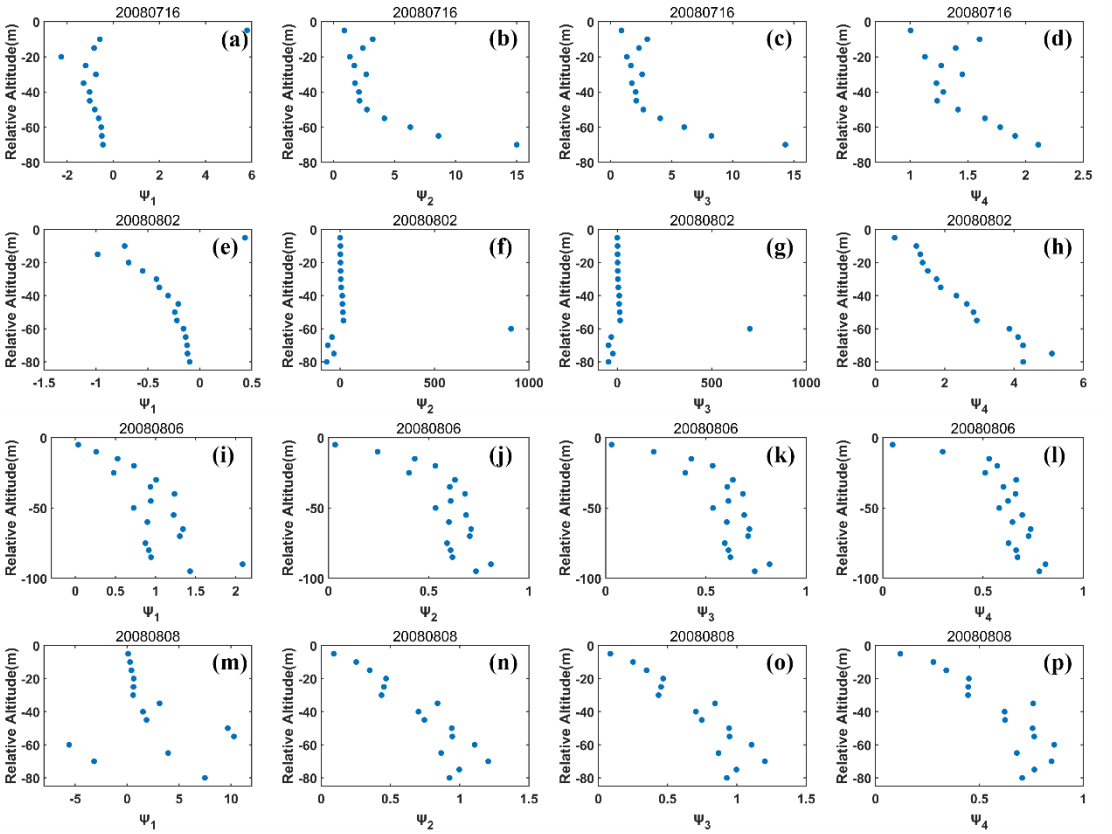

Figure S1. Same as Figure 3, but with the different method for obtaining adiabatic properties: adiabatic liquid water content (LWC_a) is calculated from the adiabatic growth from cloud base, the maximum number concentration at each level is assumed to be adiabatic volume radius (r_{va}), and adiabatic number concentration (n_a) is calculated with LWC_a and n_a.

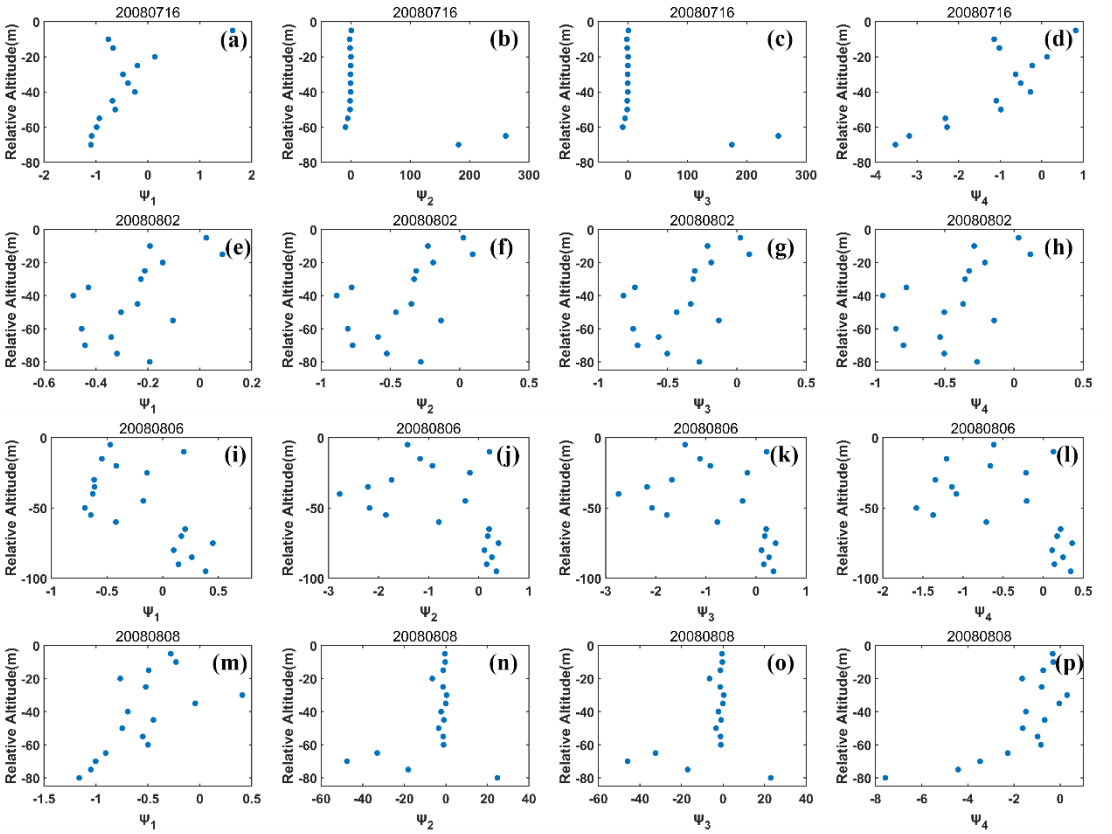

Figure S2. Same as Figure 3, but with the different method for obtaining adiabatic properties: the maximum liquid water content at each level is assumed to be adiabatic liquid water content (LWC_a), the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), and adiabatic volume mean radius (r_{va}) is calculated with LWC_a and n_a.

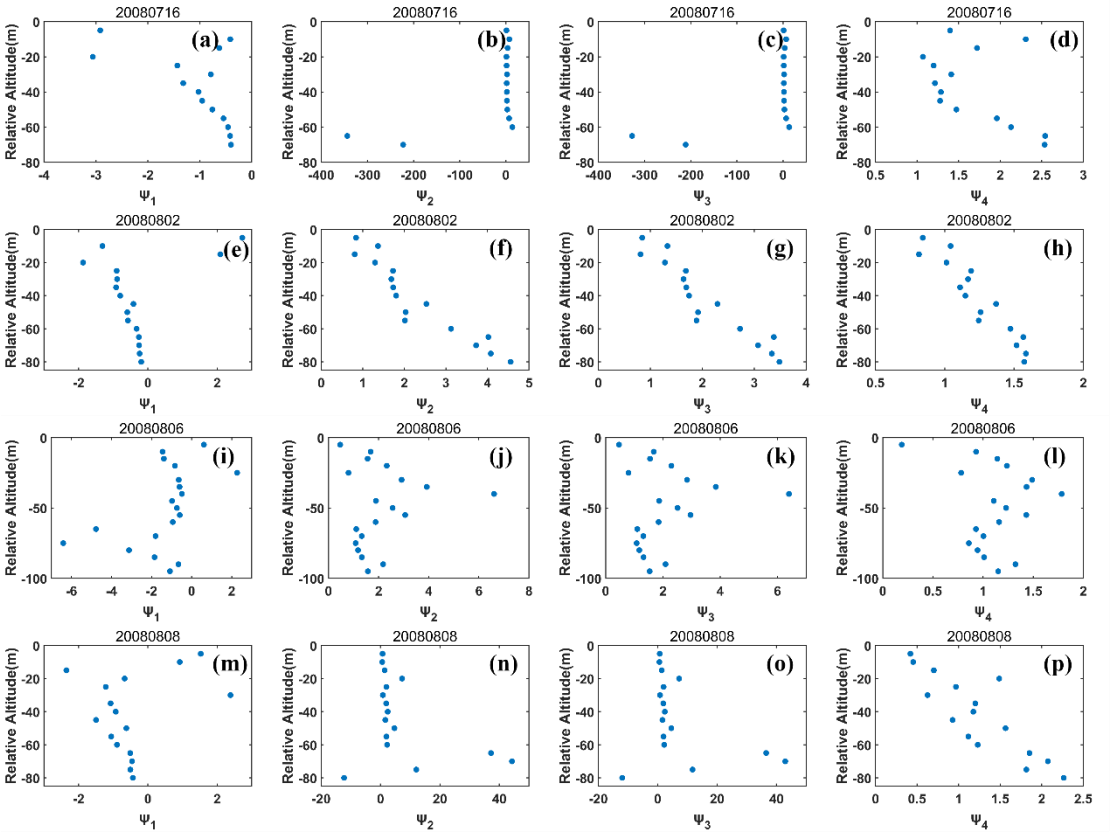

Figure S3. Same as Figure 3, but with the different method for obtaining adiabatic properties: the maximum liquid water content at each level is assumed to be adiabatic liquid water content (LWC_a), the maximum volume mean radius at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic number concentration (n_a) is calculated with LWC_a and r_{va}.

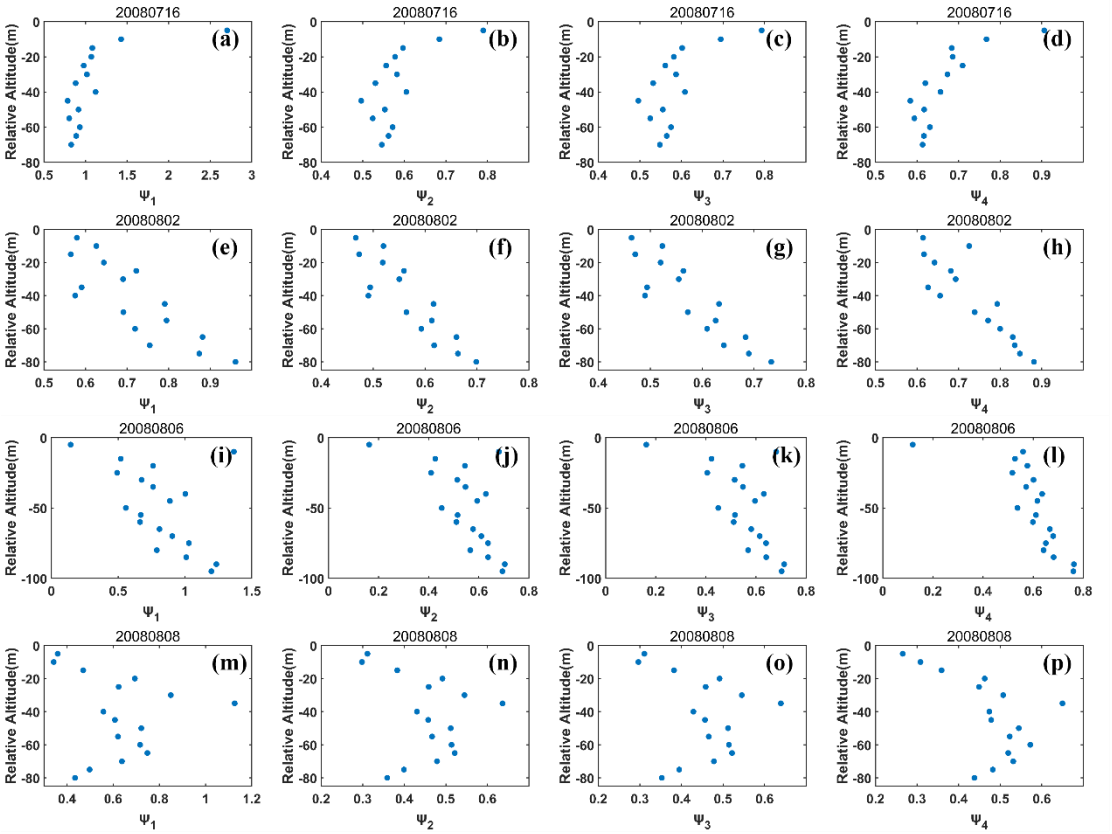

Figure S4. Same as Figure 3, but with the different method for obtaining adiabatic properties: the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), the maximum volume mean radius at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic liquid water content (LWC_a) is calculated with n_a and r_{va}.

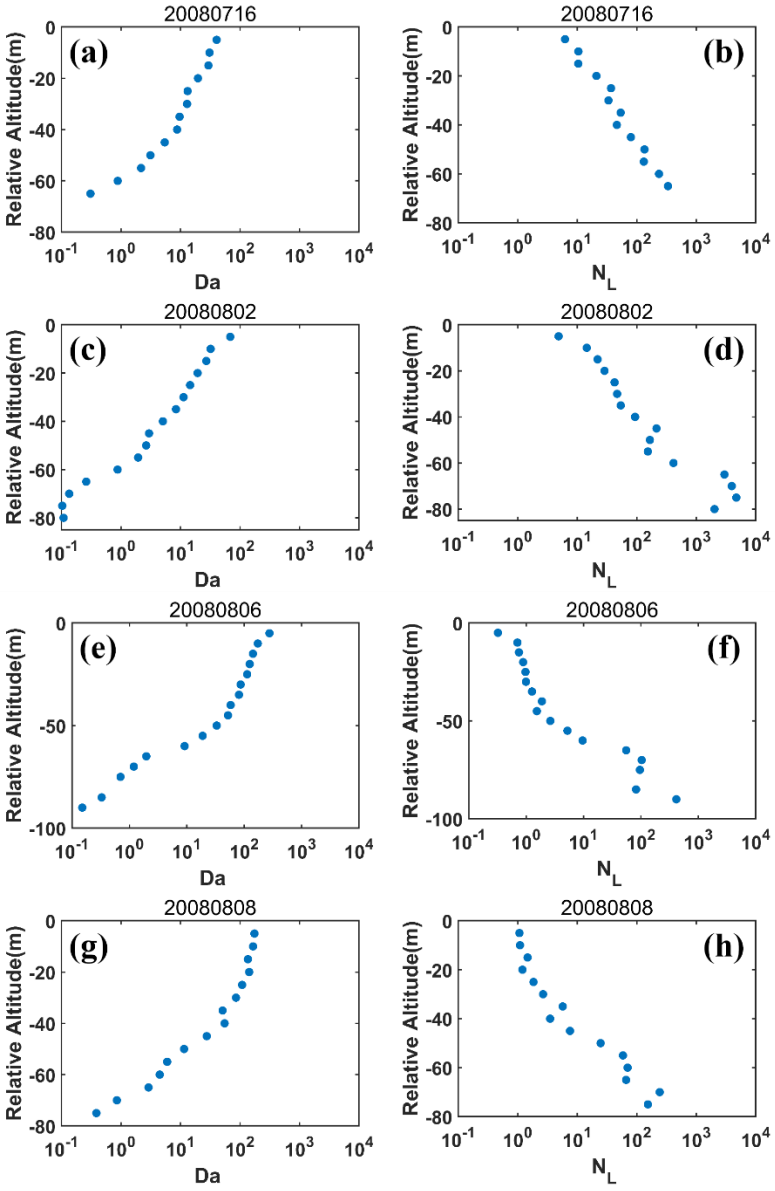

Figure S5. Same as Figure 4, but with the different method for obtaining adiabatic properties: adiabatic liquid water content (LWC_a) is calculated by adiabatic condensation growth of droplets, the maximum number concentration at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic number concentration (n_a) is calculated with LWC_a and n_a.

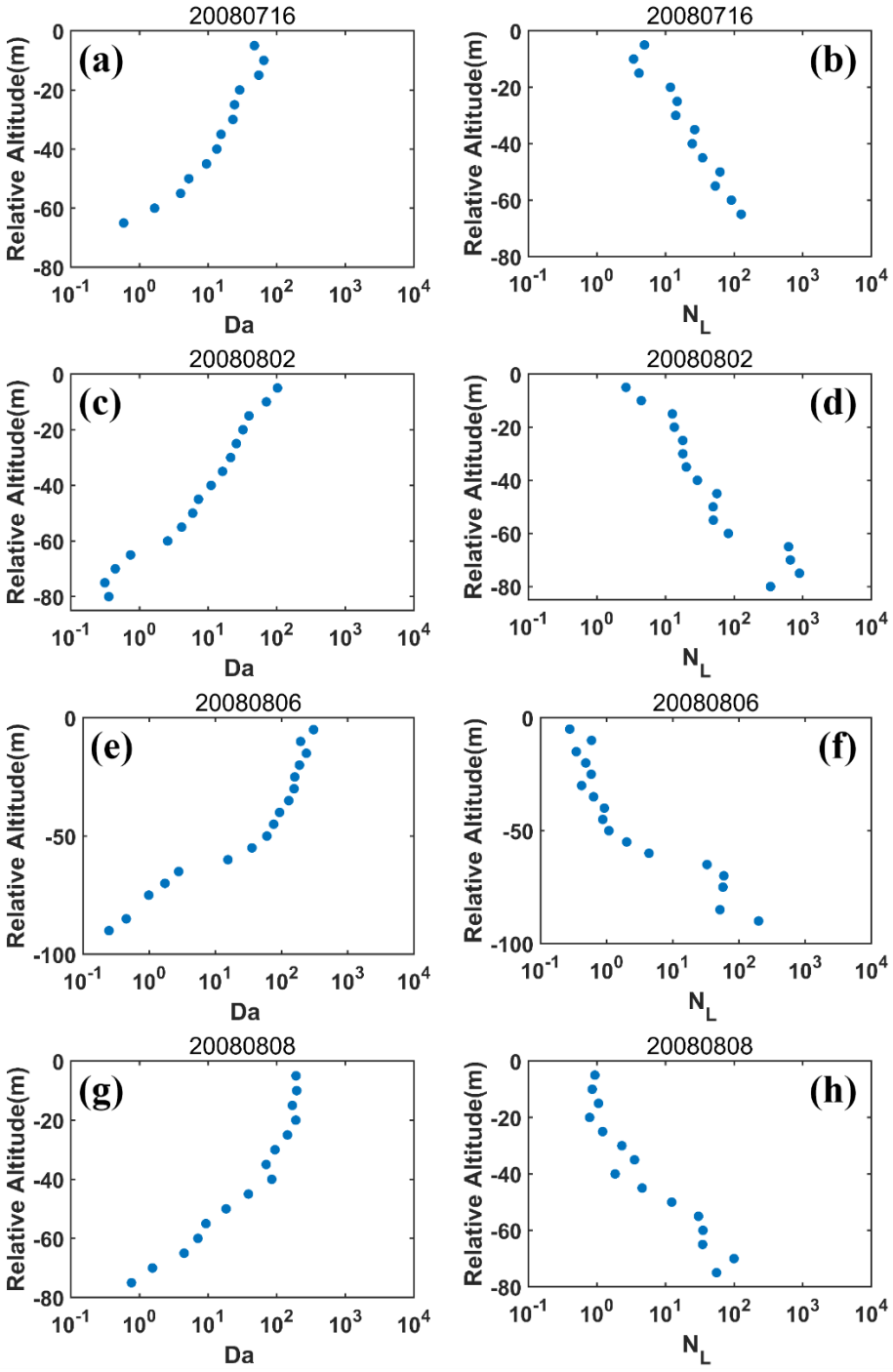

Figure S6. Same as Figure 4, but with the different method for obtaining adiabatic properties: the maximum liquid water content at each level is assumed to be adiabatic liquid water content (LWC_a), the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), and adiabatic volume mean radius (r_{va}) is calculated with LWC_a and n_a.

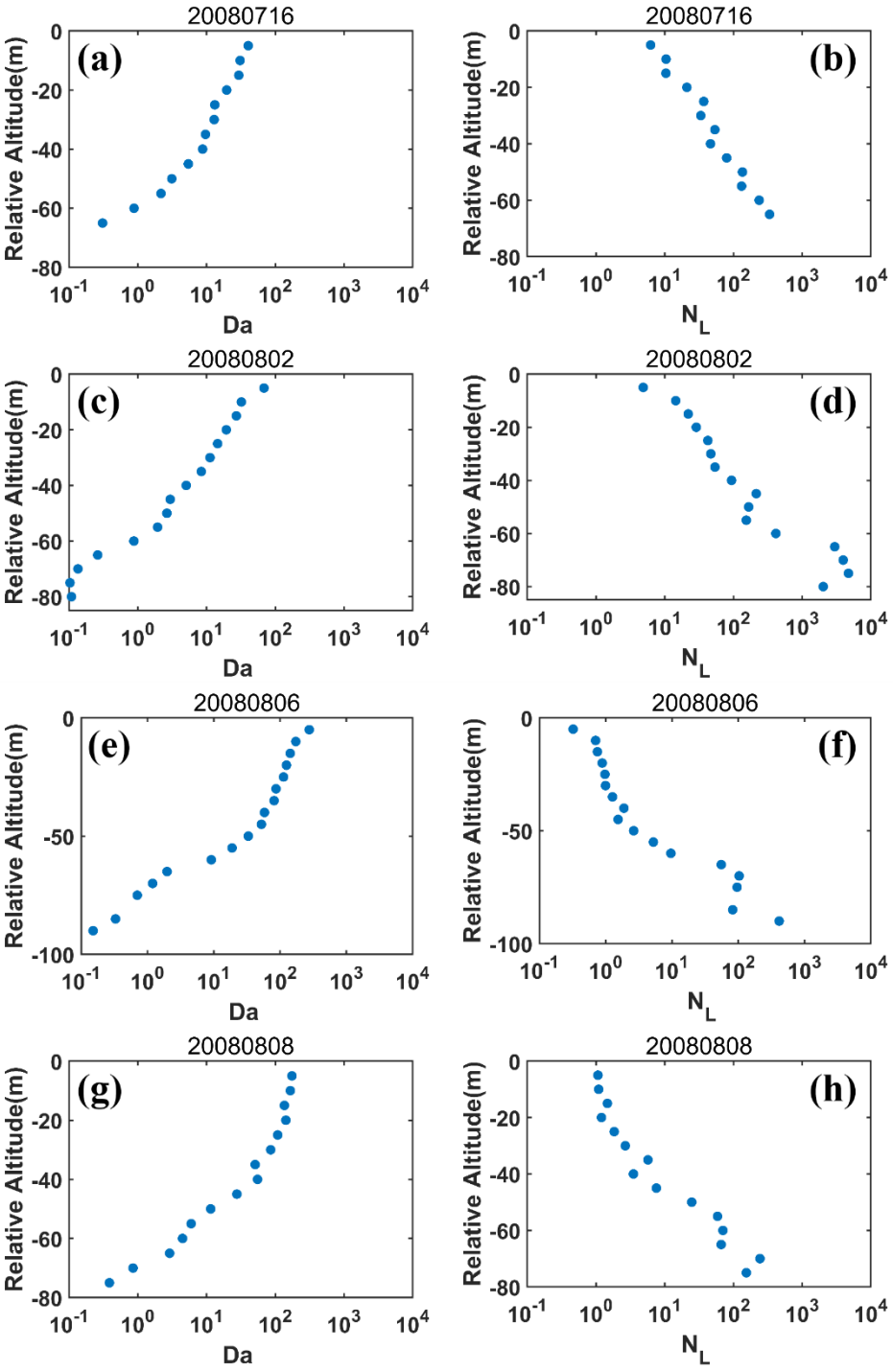

Figure S7. Same as Figure 4, but with the different method for obtaining adiabatic properties: the maximum liquid water content at each level is assumed to be adiabatic liquid water content (LWC_a), the maximum volume mean radius at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic number concentration (n_a) is calculated with LWC_a and r_{va}.

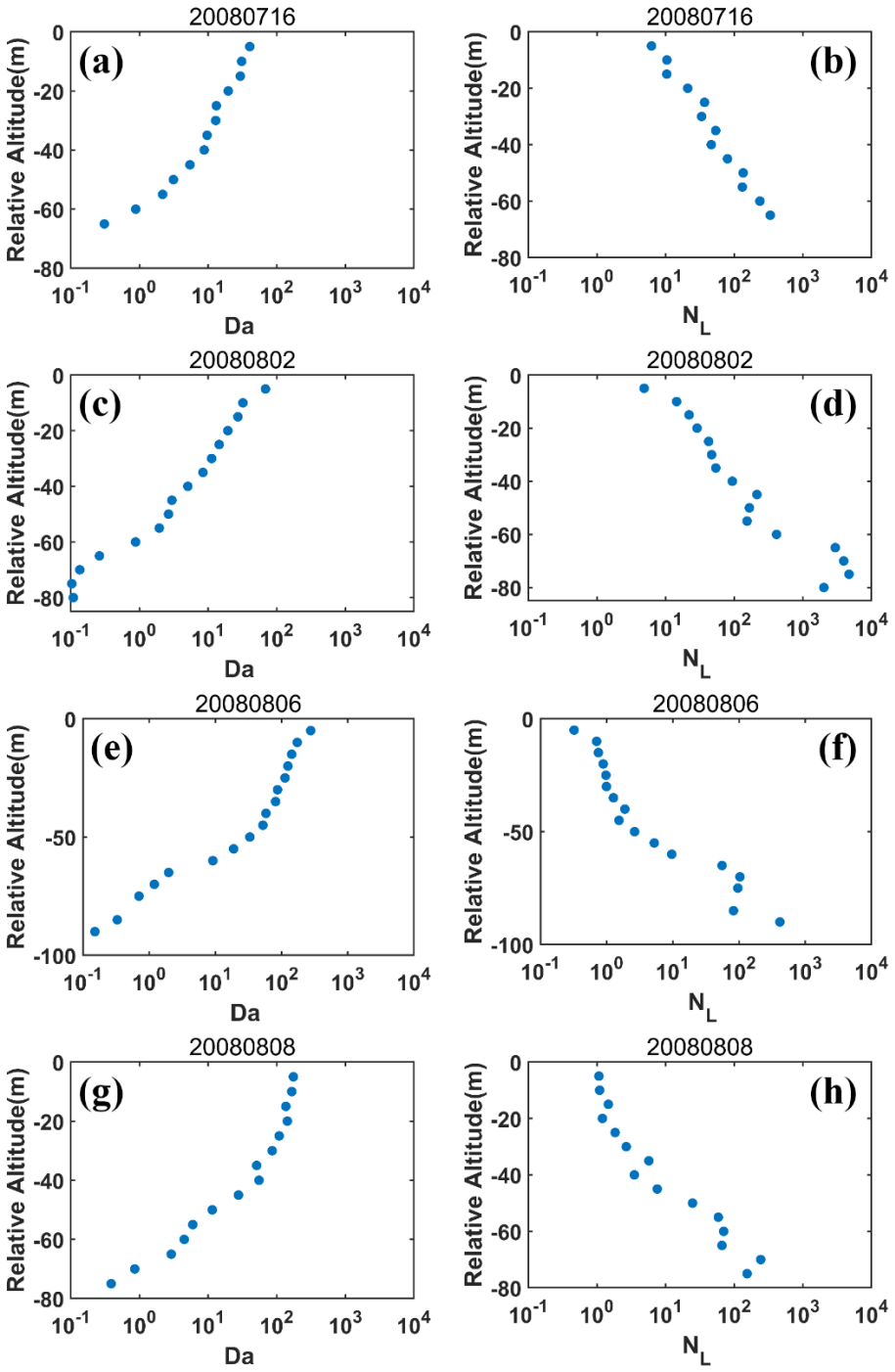

Figure S8. Same as Figure 4, but with the different method for obtaining adiabatic properties: the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), the maximum number concentration at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic liquid water content (LWC_a) is calculated with n_a and r_{va}.

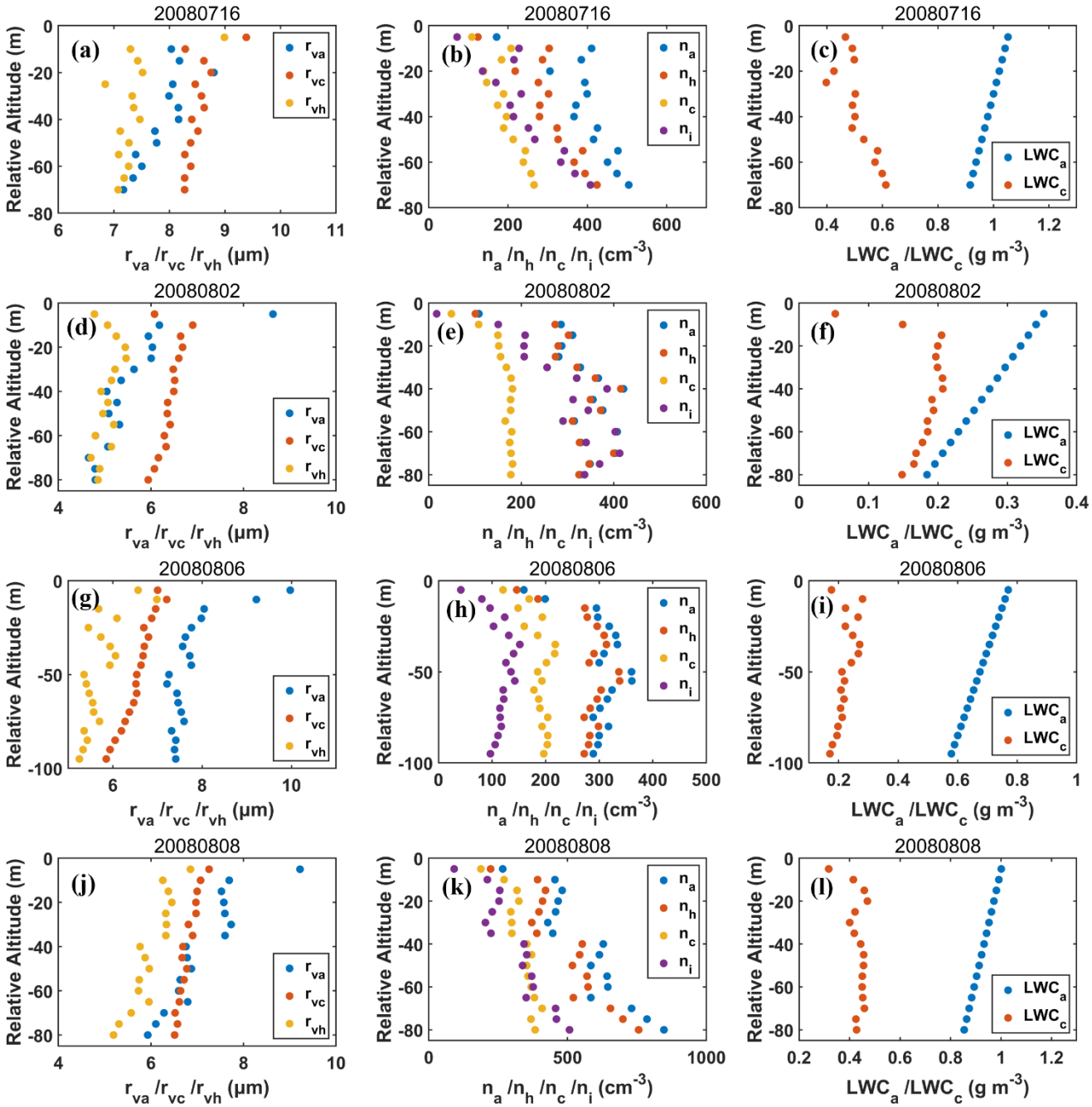

Figure S9. Height dependence of (a) r_{va}, r_{vc}, r_{vh}, (b) n_a, n_h, n_c, n_i and (c) LWC_a, LWC_c 16 July 2008; height dependence of (d) r_{va}, r_{vc}, r_{vh}, (e) n_a, n_h, n_c, n_i and (f) LWC_a, LWC_c 02 August 2008; height dependence of (g) r_{va}, r_{vc}, r_{vh}, (h) n_a, n_h, n_c, n_i and (i) LWC_a, LWC_c 06 August 2008; height dependence of (j) r_{va}, r_{vc}, r_{vh}, (k) n_a, n_h, n_c, n_i and (l) LWC_a, LWC_c 08 August 2008. Adiabatic liquid water content (LWC_a) is calculated by adiabatic condensation growth of droplets, the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), and adiabatic volume mean radius (r_{va}) is calculated with LWC_a and n_a.

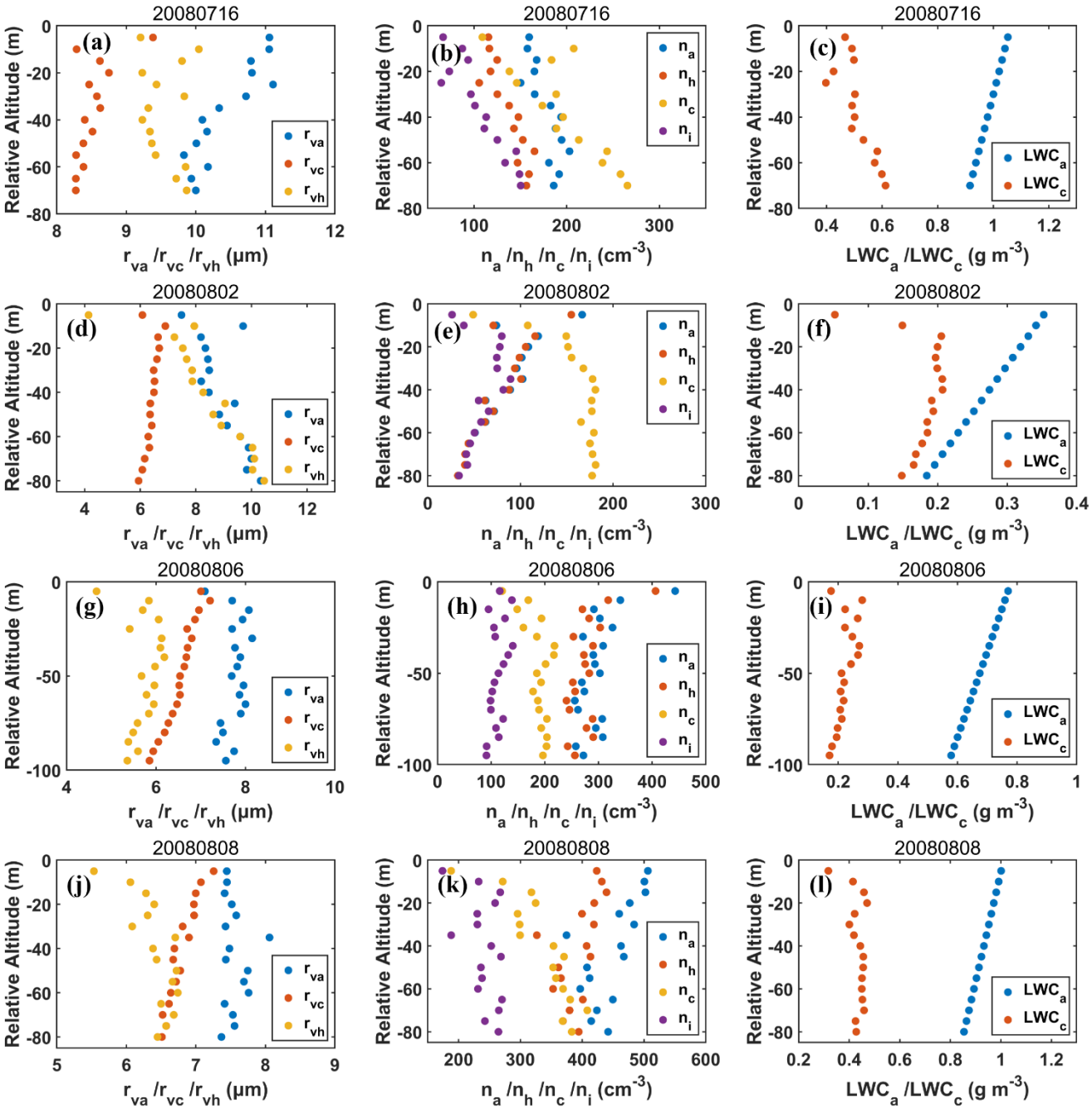

Figure S10. Same as Figure S9, but with the different method for obtaining adiabatic properties: adiabatic liquid water content (LWC_a) is calculated from the adiabatic growth from cloud base, the maximum volume mean radius at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic number concentration (n_a) is calculated with LWC_a and r_{va}.

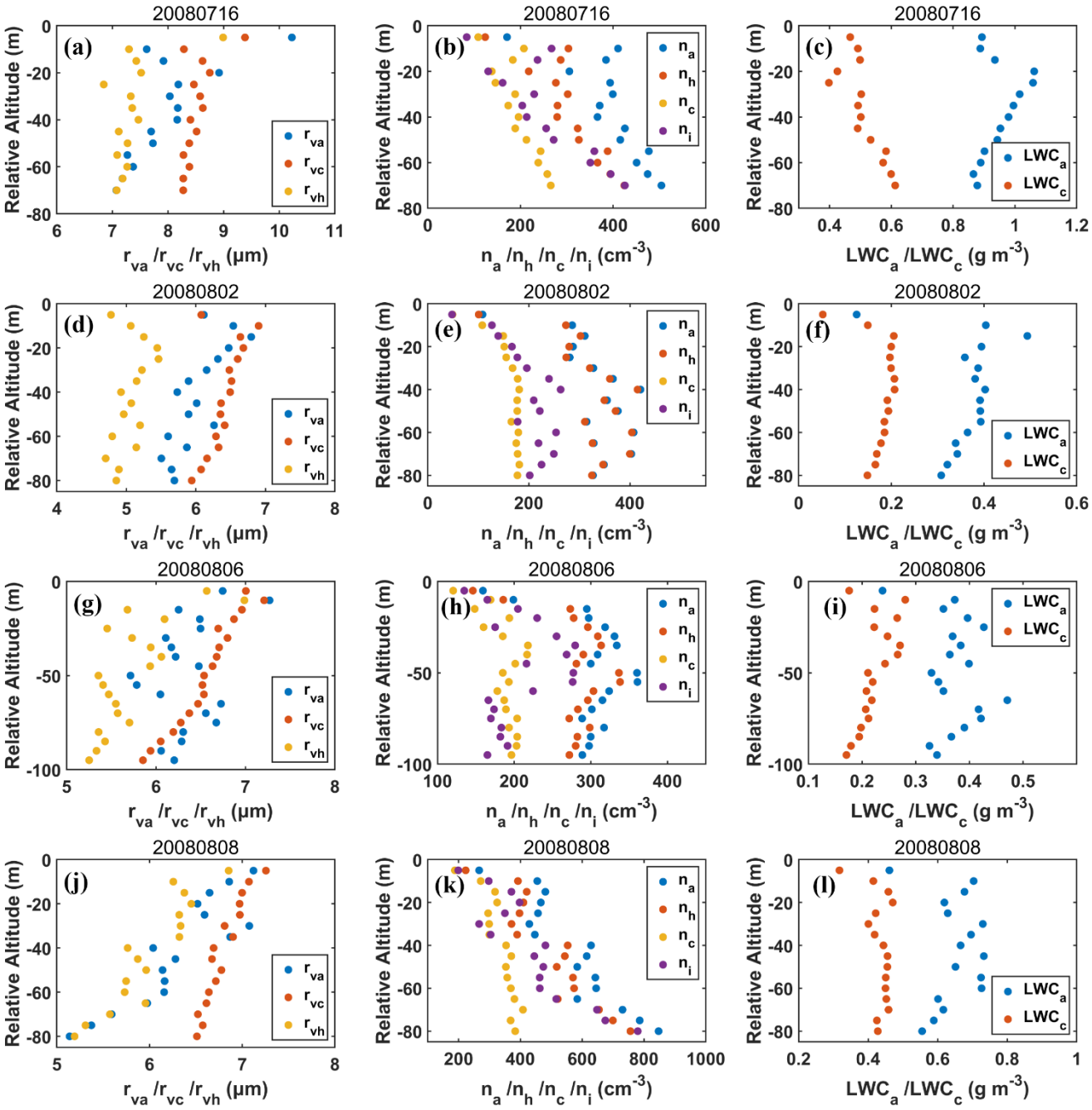

Figure S11. Same as Figure S9, but with the different method for obtaining adiabatic properties: the maximum liquid water content at each level is assumed to be adiabatic liquid water content (LWC_a), the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), and adiabatic volume mean radius (r_{va}) is calculated with LWC_a and n_a.

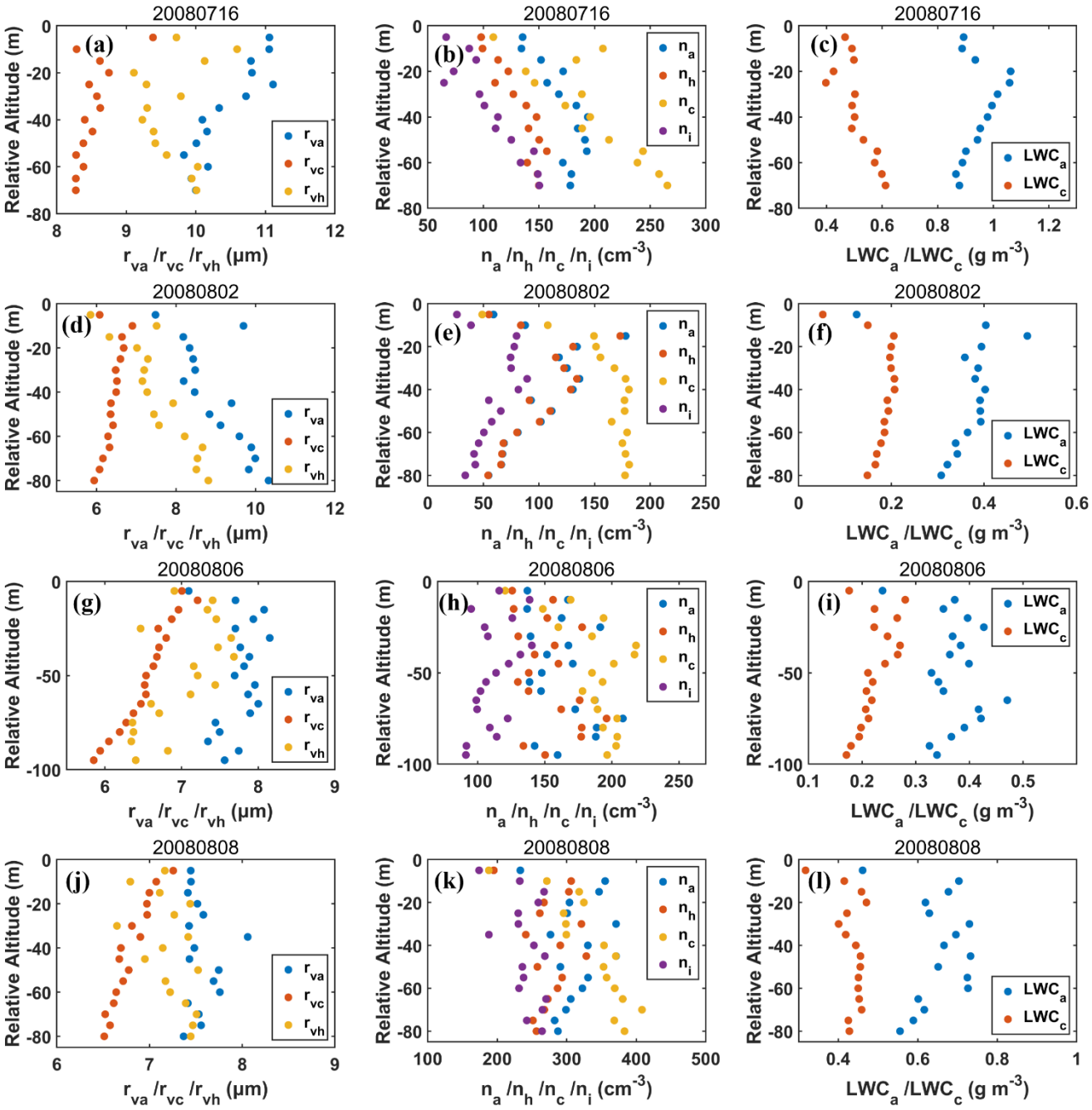

Figure S12. Same as Figure 9, but with the different method for obtaining adiabatic properties: the maximum liquid water content at each level is assumed to be adiabatic liquid water content (LWC_a), the maximum volume mean radius at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic number concentration (n_a) is calculated with LWC_a and r_{va}.

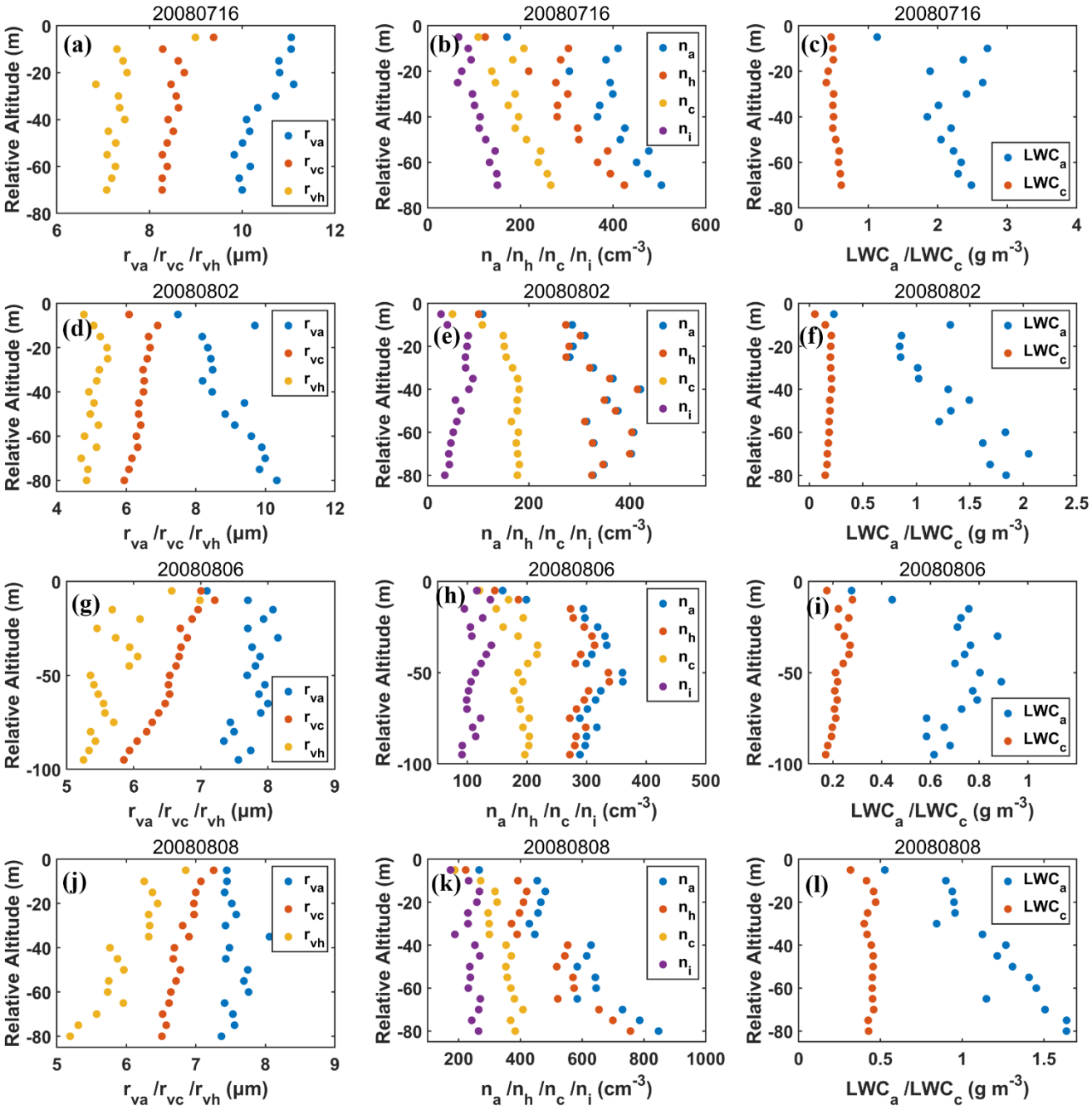

Figure S13. Same as Figure S9, but with the different method for obtaining adiabatic properties: the maximum number concentration at each level is assumed to be adiabatic number concentration (n_a), the maximum number concentration at each level is assumed to be adiabatic volume mean radius (r_{va}), and adiabatic liquid water content (LWC_a) is calculated with n_a and r_{va}.