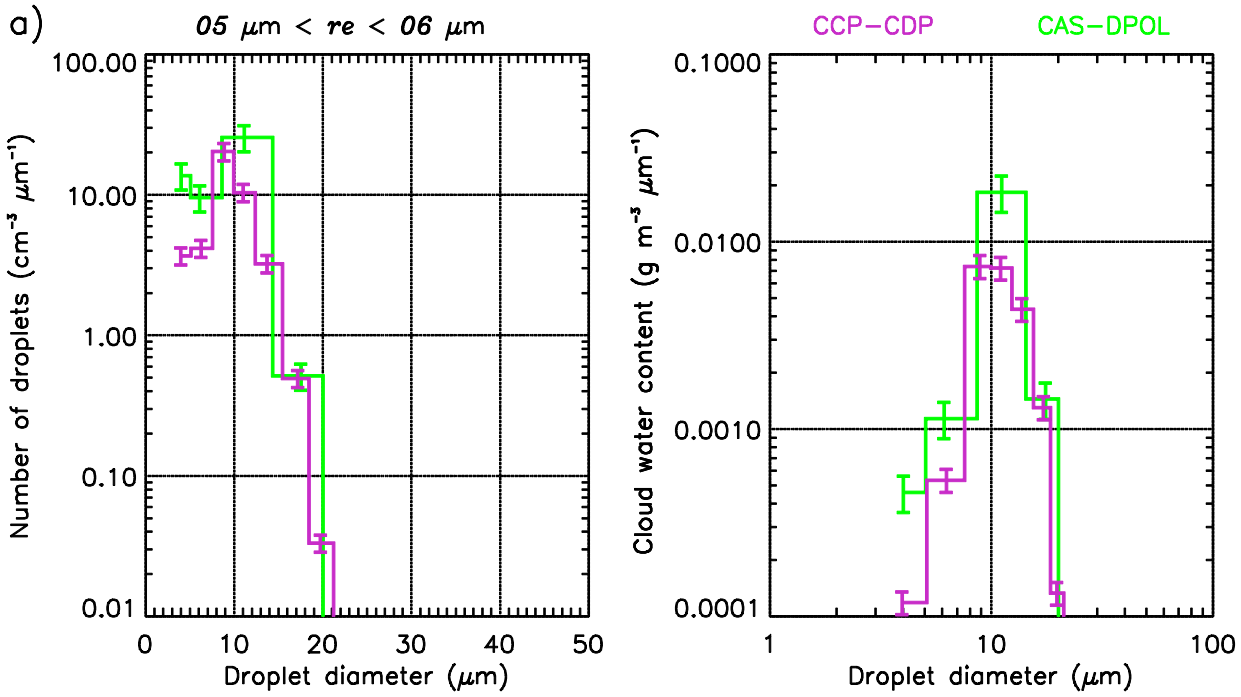
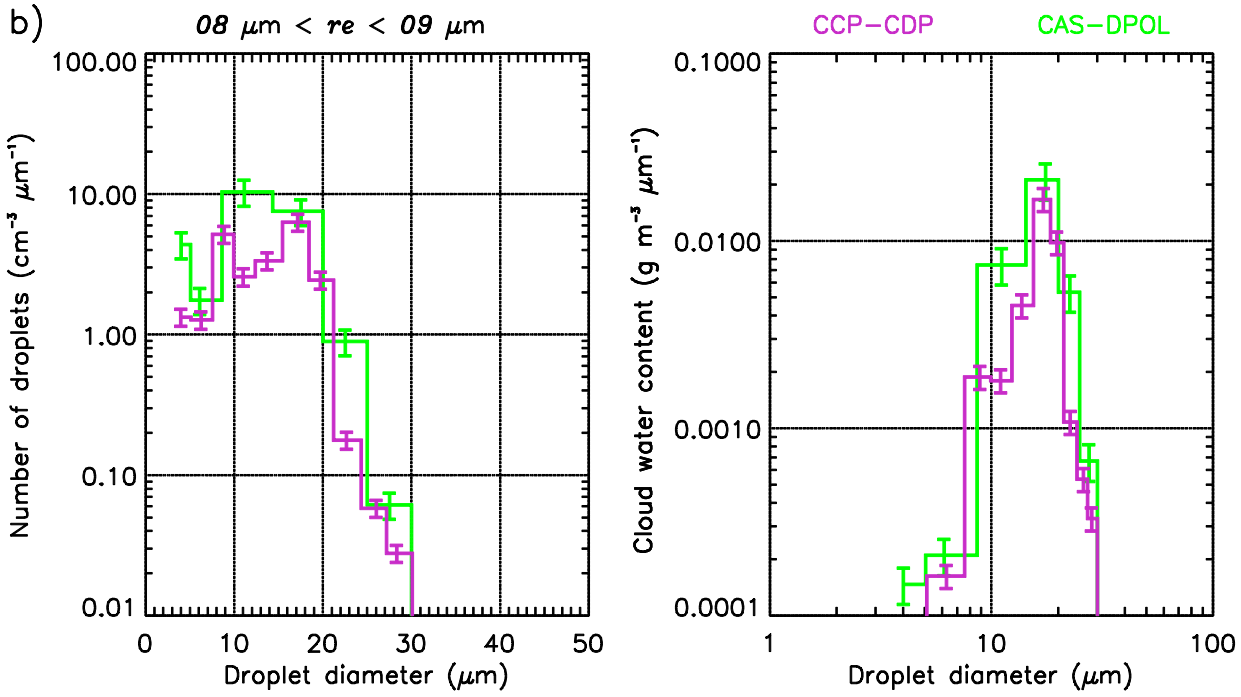

a)
05 μm < re < 06 μm
CCP–CDP
CAS–DPOL
Number of droplets (cm⁻³ μm⁻¹)
100.00
10.00
1.00
0.10
0.01
0
10
20
30
40
50
Droplet diameter (μm)
Cloud water content (g m⁻³ μm⁻¹)
0.1000
0.0100
0.0010
0.0001
1
10
100
Droplet diameter (μm)


b)
08 μm < re < 09 μm
CCP–CDP
CAS–DPOL
Number of droplets (cm⁻³ μm⁻¹)
100.00
10.00
1.00
0.10
0.01
0
10
20
30
40
50
Droplet diameter (μm)
Cloud water content (g m⁻³ μm⁻¹)
0.1000
0.0100
0.0010
0.0001
1
10
100
Droplet diameter (μm)

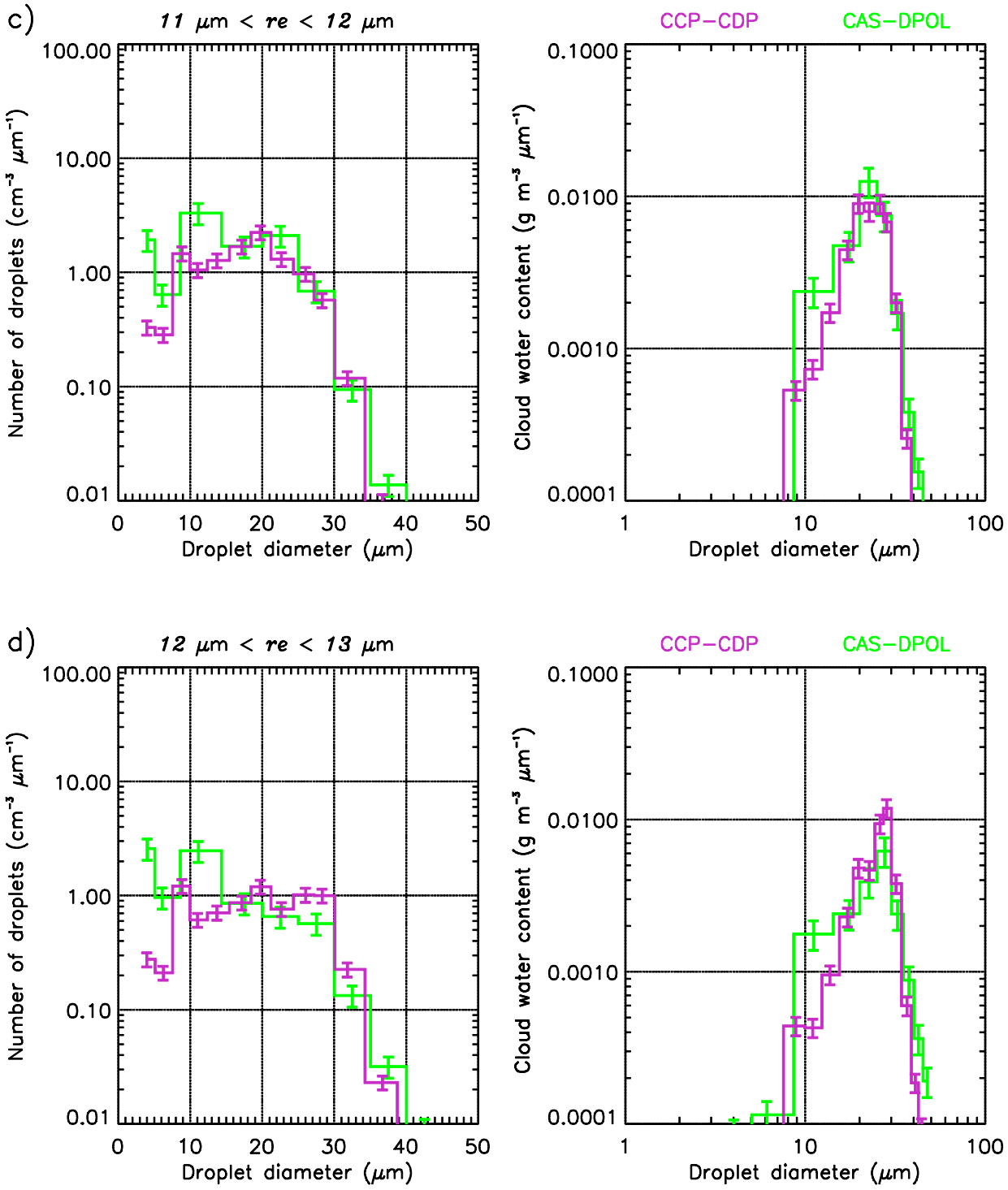
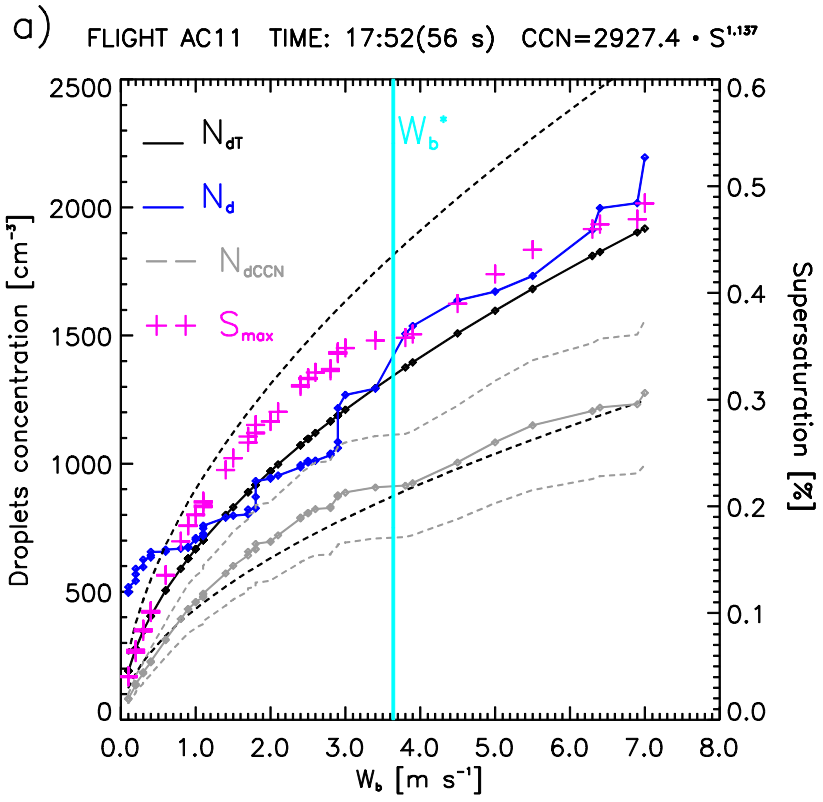
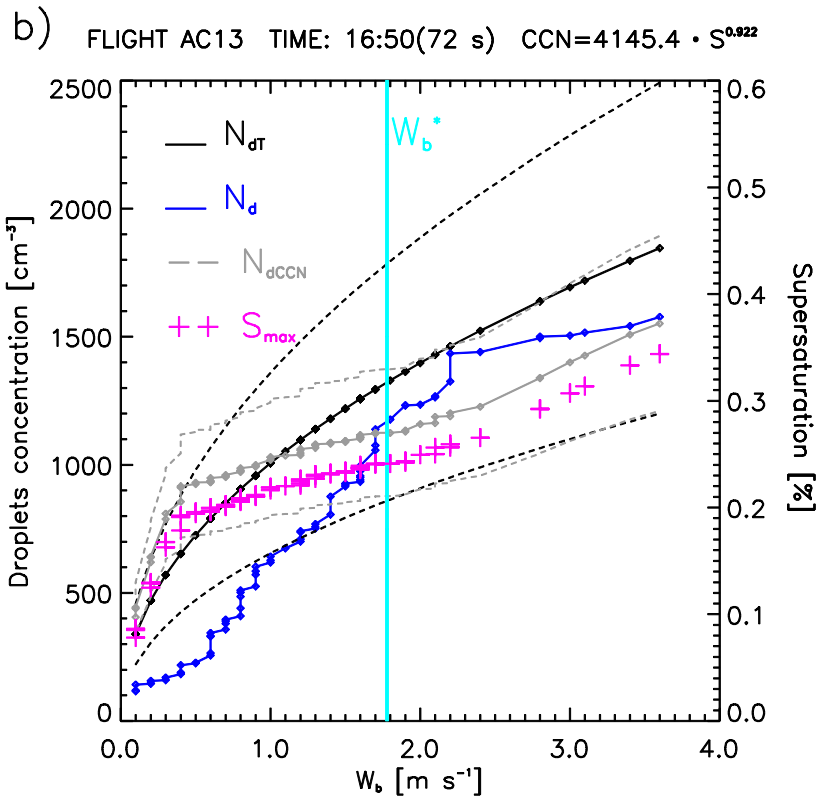
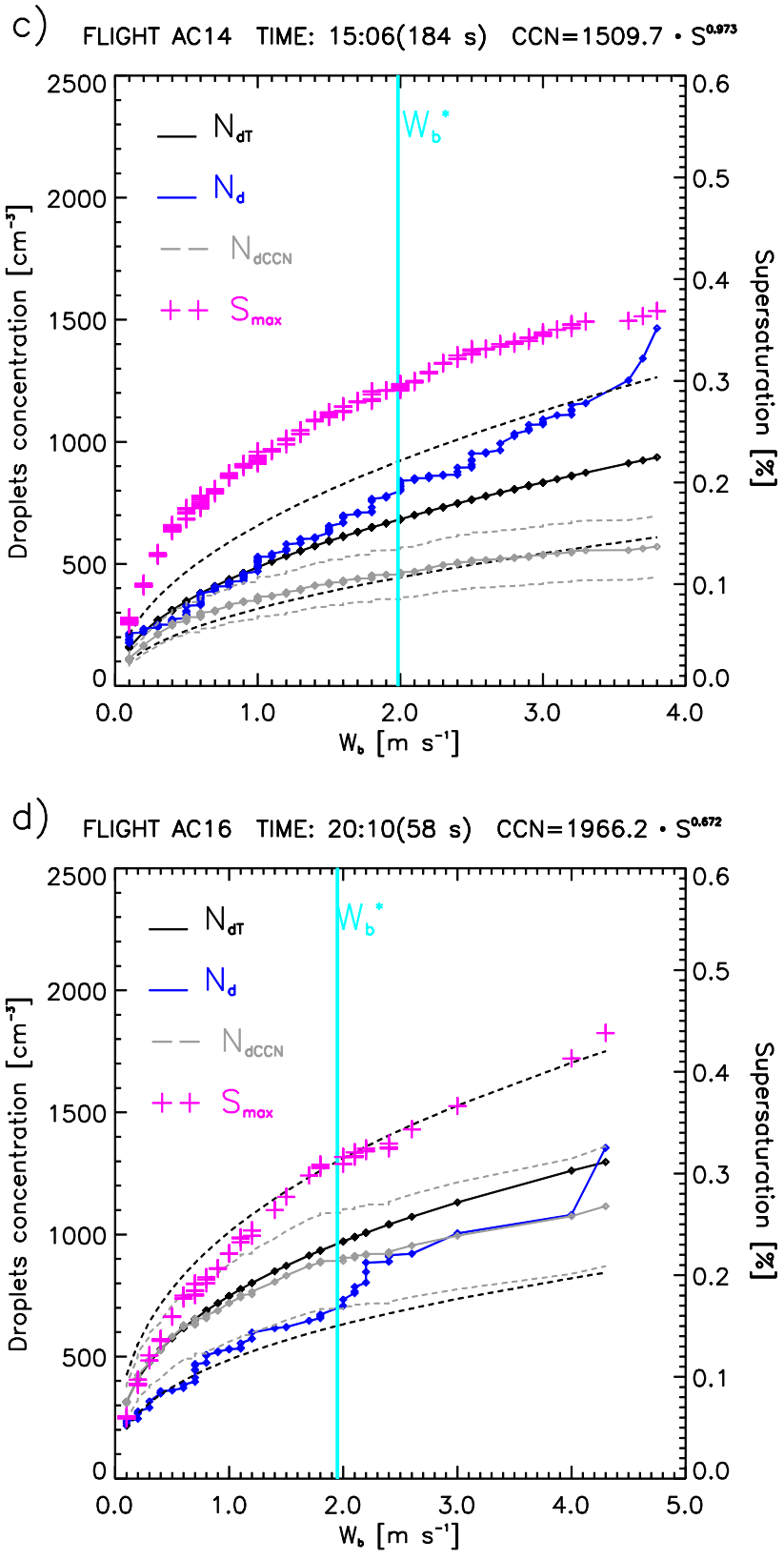


Figure 6. (left) Mean cloud droplet concentration (solid lines) and (right) cloud water content as a function of droplet diameter in the left and right panels, respectively, for a) 5 µm < r_e < 6 µm; b) 8 µm < r_e < 9 µm; c) 11 µm < r_e < 12 µm; d) 12 µm < r_e < 13 µm. The probes are identified by colors as shown at the top of the panels. The error bars indicate the uncertainty range of mean cloud droplet concentration and cloud water content values as a function of droplet diameter.


a)
FLIGHT AC11 TIME: 17:52(56 s) CCN=2927.4 • S^1.137
N_dT
N_d
N_dCCN
S_max
W_b*
Droplets concentration [cm^-3]
Supersaturation [%]
W_b [m s^-1]
0
500
1000
1500
2000
2500
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0


b)
FLIGHT AC13 TIME: 16:50(72 s) CCN=4145.4 • S^0.922
N_dT
N_d
N_dCCN
S_max
W_b*
Droplets concentration [cm^-3]
Supersaturation [%]
W_b [m s^-1]
0
500
1000
1500
2000
2500
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.0
1.0
2.0
3.0
4.0


c)
FLIGHT AC14 TIME: 15:06(184 s) CCN=1509.7 • S^0.973
N_dT
N_d
N_dCCN
S_max
W_b*
Droplets concentration [cm^-3]
Supersaturation [%]
W_b [m s^-1]
0
500
1000
1500
2000
2500
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.0
1.0
2.0
3.0
4.0
d)
FLIGHT AC16 TIME: 20:10(58 s) CCN=1966.2 • S^0.672
N_dT
N_d
N_dCCN
S_max
W_b*
Droplets concentration [cm^-3]
Supersaturation [%]
W_b [m s^-1]
0
500
1000
1500
2000
2500
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.0
1.0
2.0
3.0
4.0
5.0

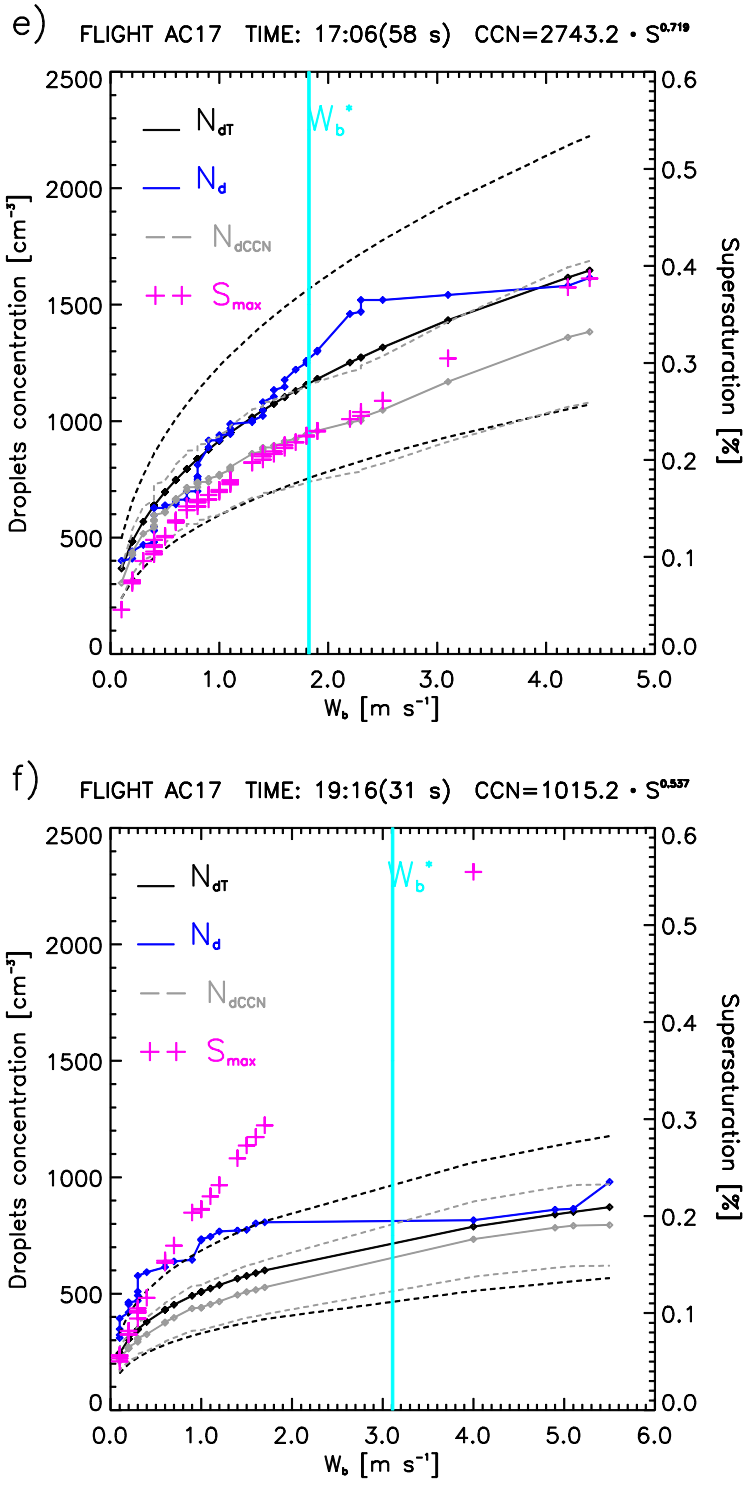


Figure 11a-f. N_{dCCN}, S, N_{dT} and N_d values are presented as a function of the cloud base updrafts (W_b). This plot is based on the 'probability matching method' (PMM), using same percentiles for W_b and N_d (N_{dCCN} or N_{dT}). The values of N_{dCCN}, N_{dT} and N_d are shown the left y-axis, those of S on the right y-axis. The black dashed lines are the N_{dT} uncertainties. The gray solid (dashed) lines are the N_{dCCN} values (uncertainties). The effective updraft W_b* for each flight segment is shown by the cyan line. The data are based on the CAS-DPOL probe. The time, period of measurements (sample size in seconds), and $N_{CCN}(S)$ equation are shown on the top of the figures.