

**Some results from the in-trail cloud penetration by the C-130 and the King Air.
Dec 19, 2004 - 13:44 to 13:54**

The King Air led during this period, the C-130 followed with a separation of about 3 nm.

The instruments compared here are those yielding LWC data. The parameters used are listed in Table below; the specific meaning of each parameter can be found in the documentation for the specific aircraft data set.

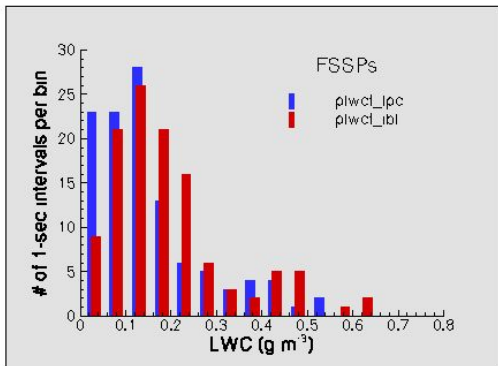
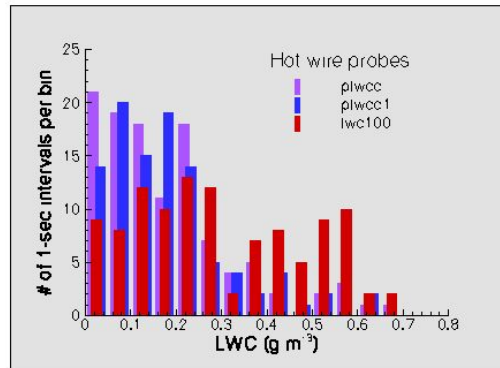
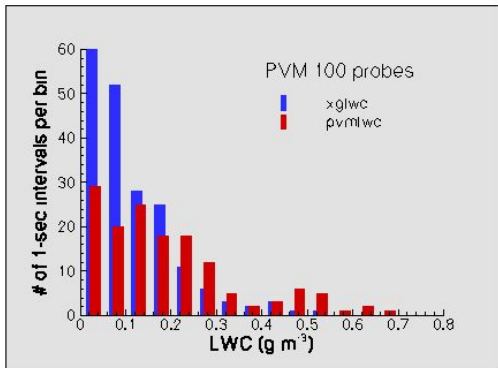
	C-130	King Air
hot-wire	PLWCC, PLWCC1	lwc100
PVM-100	XGLWC	pvm1wc
FSSP	PLWCF_LPC	plwcf_ibl
1D OAP	PLWCX_RWI	plwex_obr
2D OAP	PLWC2DC_LWC2	lwc2dc

Results are summarized in the graphs that follow. The first is a statistical comparison, the latter ones are time traces in which the best match was subjectively achieved by time-shifting one data set with respect to the other. Because of the nature of the flight, there was no fixed precisely controlled delay between the two aircraft and there were inevitable differences in the paths (guessing to be roughly of the order of 100 m) as well. Also, of course, cloud composition was changing in the time interval between the passage of the two aircraft.

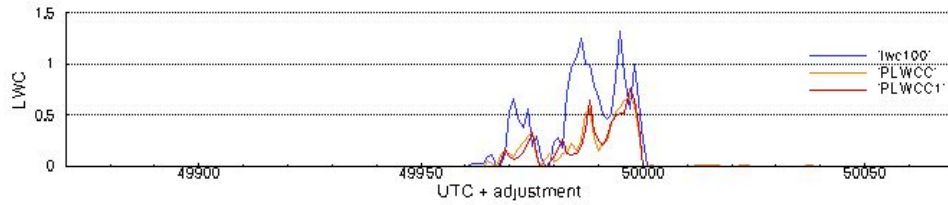
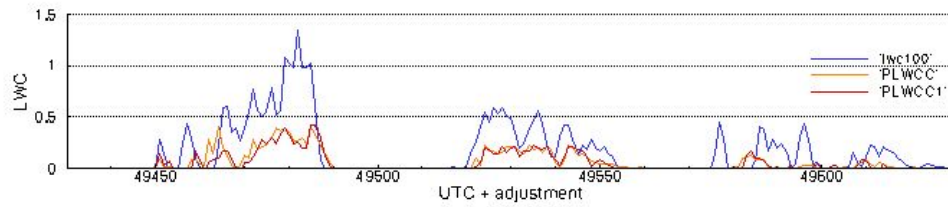
For a quick numerical comparison, the table below lists the mean and variance of the LWCs measured (above the threshold of 0.05 g m^{-3}) by the cloud-droplet instruments.

XGLWC	pvm1wc	PLWCF_LPC	plwcf_ibl	PLWCC	PLWCC1	lwc100
0.15	0.23	0.18	0.2	0.22	0.21	0.43
0.010	0.021	0.013	0.017	0.019	0.020	0.093

One could consider “XGLWC” and “lwc100” as outliers, and the rest to be near 0.2 g m^{-3} with about $\pm 10\%$ variations.

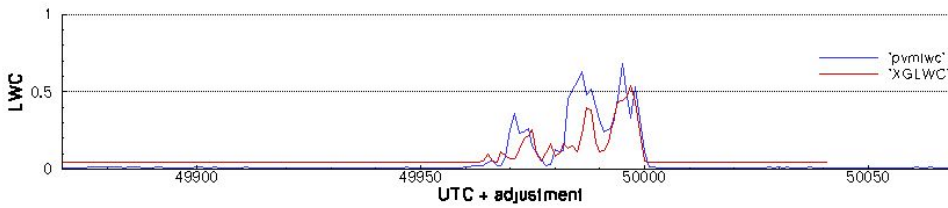
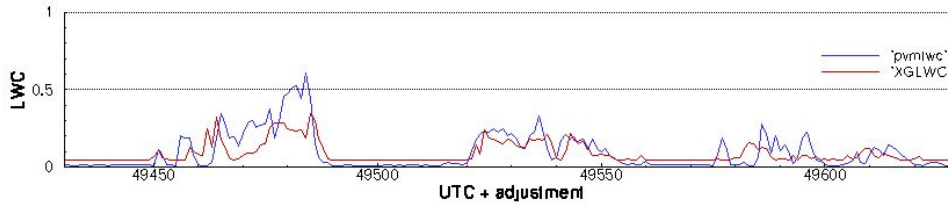


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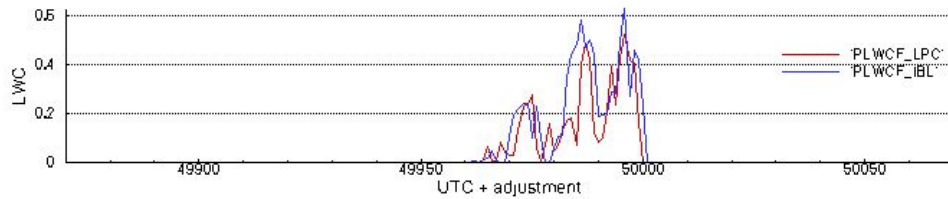
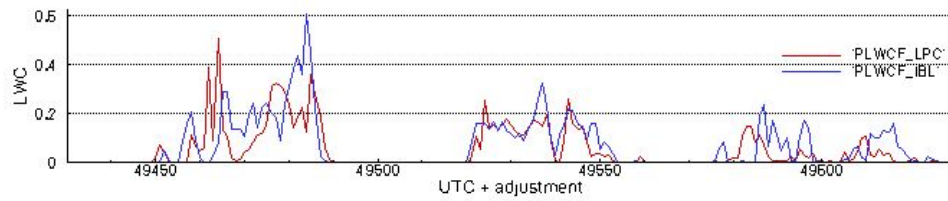
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Hot-wire LWC probes



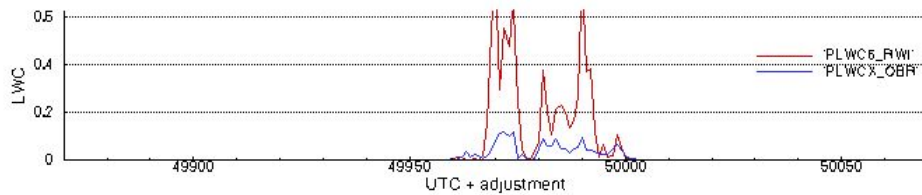
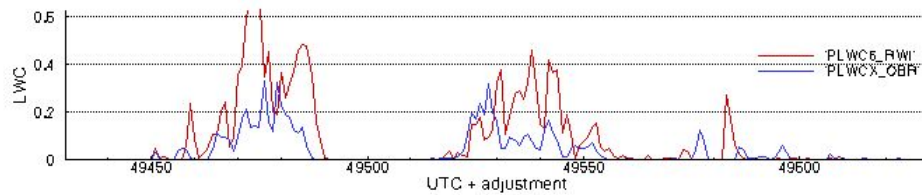
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PVM-100 LWC probes



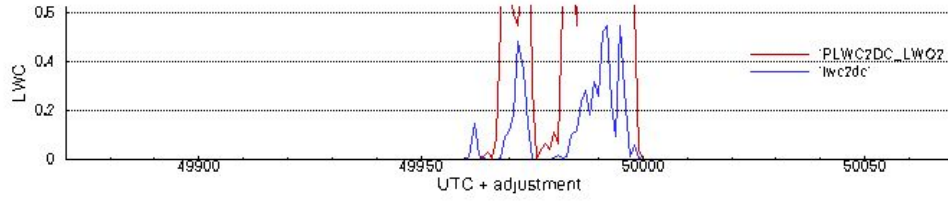
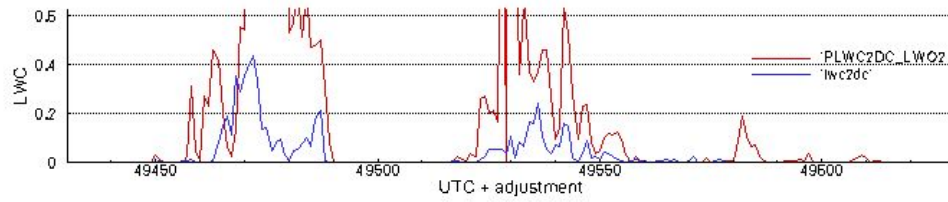
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FSSPs



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1D OAPs



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2D OAPs