

# ACLOUD Flight #15 – Polar 6 – 170609

Mission PI P6: Johannes Schneider

Objectives: "Plan B", short formation flight with P5 due to probability for fog. Turbulence measurement, CO2 instrument comparison.

Crew:

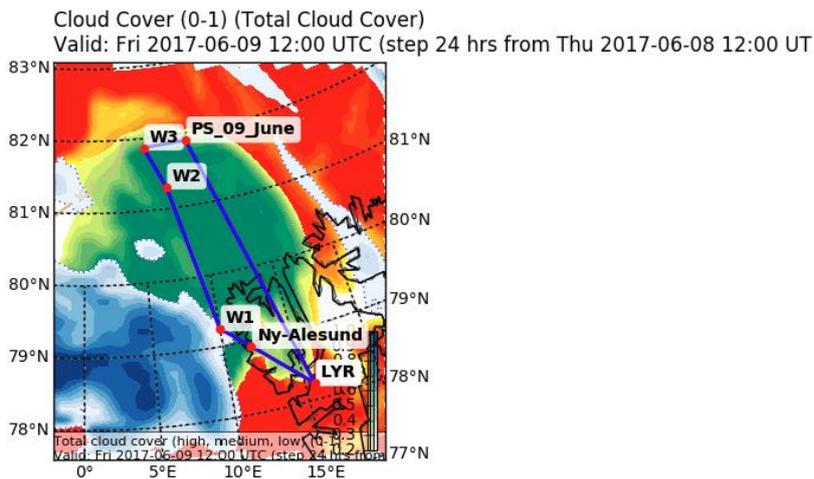
Polar 6	
PI	Johannes Schneider
Basis Data Acq.	Daniel Damaske
ALABAMA	Hans-Christian Clemen
CVI	Stephan Mertes
Gas/AWI-Aerosol	Heiko Bozem
PMS	Delphine Leroy

Flight times:

Polar 6	
Take off	07:56:30 UTC
Touch down	09:18:14 UTC

Weather situation as observed during the flight (compare to forecast):

Forecast:



Low level cloud were observed over the open water as predicted, additionally mid-level clouds around 10000 ft that were not predicted.

**Overview:**

Short flight in close formation (wing-by-wing) with P5 to measure turbulence and to compare CO2 instruments. The flight started with a joint ascent to 5000 ft, then 8000 ft, then 10000 ft. At 10000 ft two flight speeds (120 and 160 kn) were flown for 10 minutes, followed by a joint continuous descent to LYB.

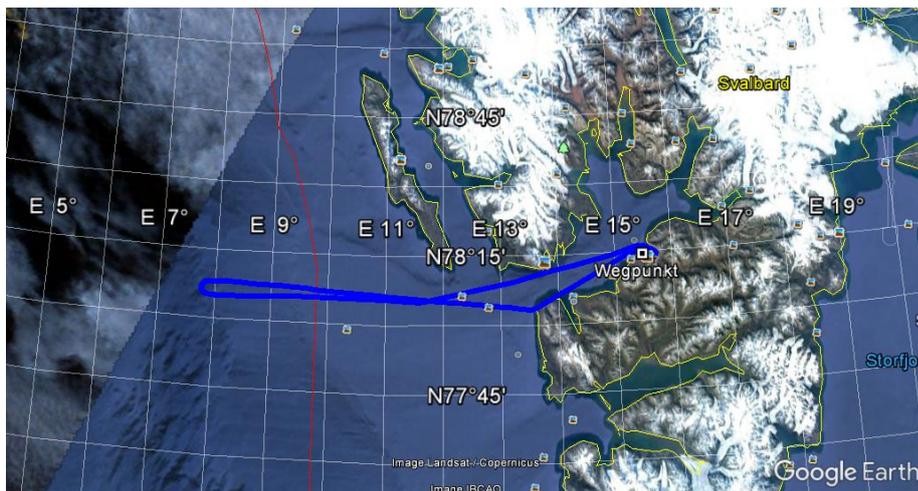
Due to risk of fog the flight was restricted to 30 minutes distance to LYB.

**Flight track and pattern:**

Flight plan:

No detailed flight plan prepared

Actual flight track:



**Instrument Status:**

Polar 6	
Basis data acquisition	Green
Nose Boom	Green
ALABAMA	Green
CVI	Green
Trace Gases	Green
AWI Aerosol	Green
KIT PMS	Green
LAMP PMS	Yellow

**Comments:**

Computer froze during attempt to connect to LAMP PMS probes, but probes worked.

**Detailed Flight Logs (Name of author... more than one is possible):****Johannes Schneider (times UTC)**

07:56:30 Take off  
08:05 P5 appears on our right side  
08:12 - 08:15 level at 5000 ft, 140 kn  
08:15:10 start climb to 8000 ft (estimated distance to P5 3000 ft)  
08:10 Heiko: CO2 decreases  
08:21:30 8000 ft  
08:22:56 low level clouds below us  
08:24:30 reach 10000 ft  
08:25 Heiko: CO2 very low  
08:29 penetrate clouds at cloud base (but at constant altitude), only shortly  
08:31 start 120 kn at 10000 ft  
08:40:34 end of 10 minutes, turn  
08:44 start way back  
08:44:24 10000 ft, 160 kn, P5 coming on right side behind us  
08:52 – 08:53 again through clouds, from cloud base to cloud top at constant altitude  
08:54 end of 10 minutes at 160 kn,  
08:55 start descent, meet P5 again below clouds  
08:56 reach cloud base  
08:56:30 descent with 500 ft/min 150 kn, P5 was further away due to cloud passage  
08:50 end of low cloud field below us  
09:00 P5 is close again  
09:18:14 Touchdown

**Pictures:**

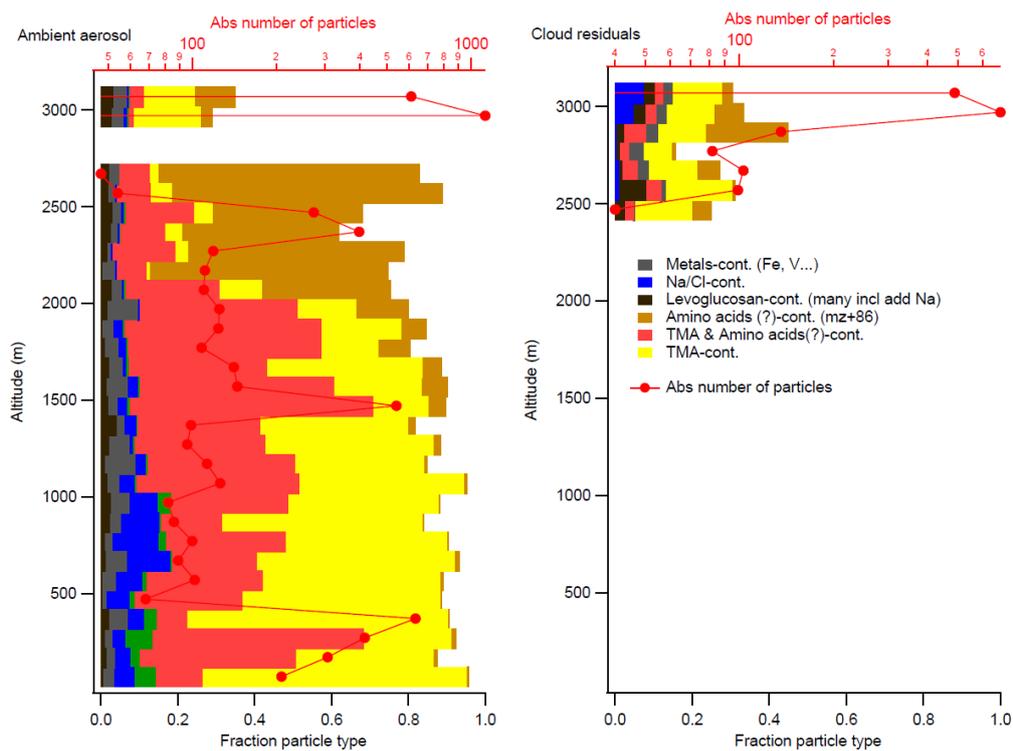
Flight in close formation, the clouds above were at about 10000 ft and were penetrated later during the flight.



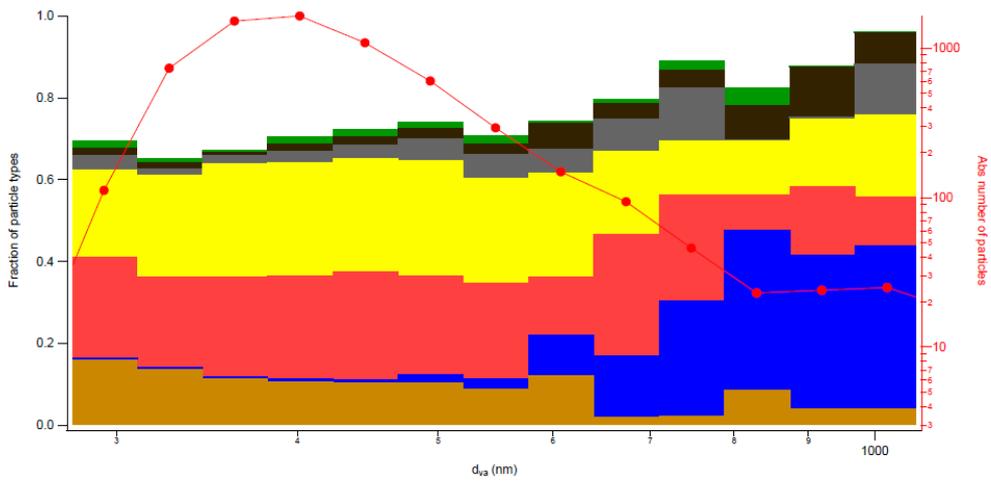
**Quicklooks:**

**ALABAMA:**

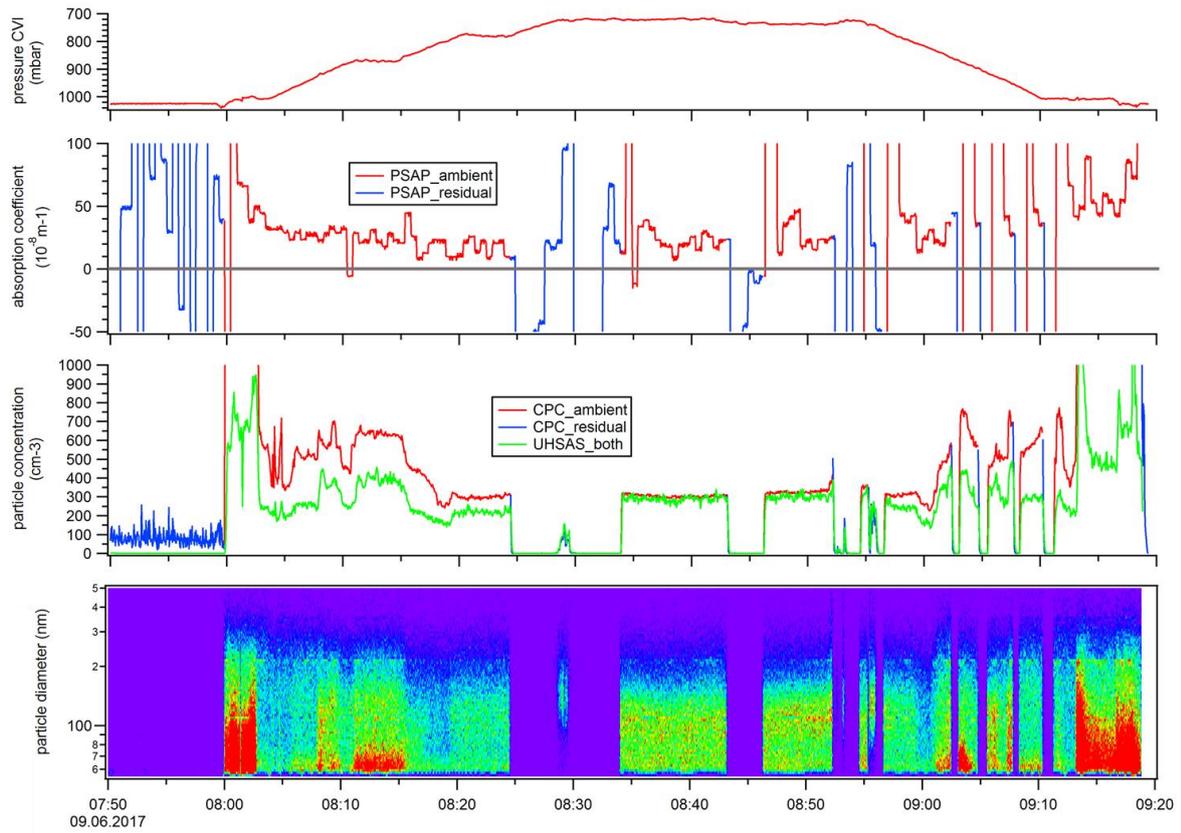
**Vertical profiles:**

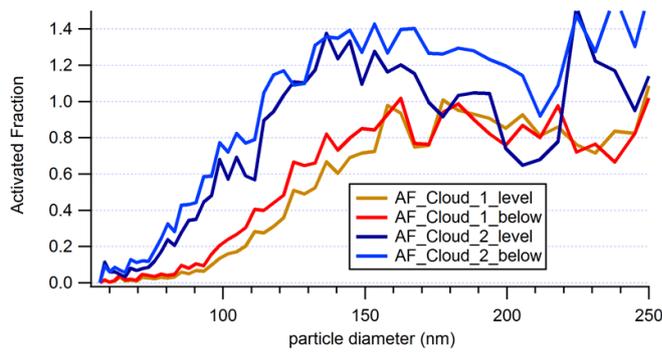
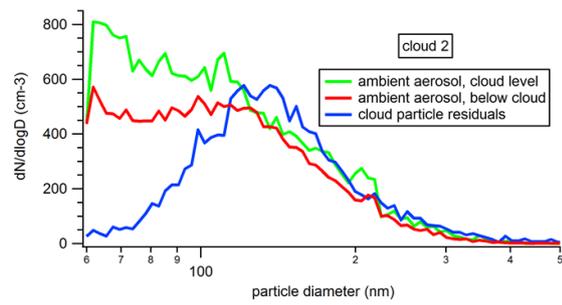
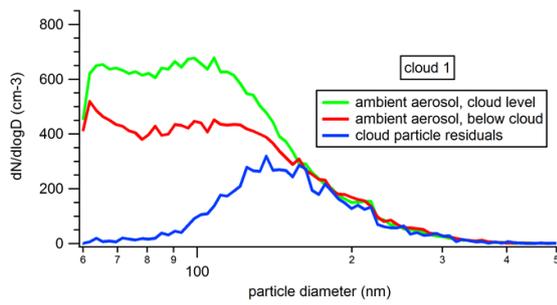
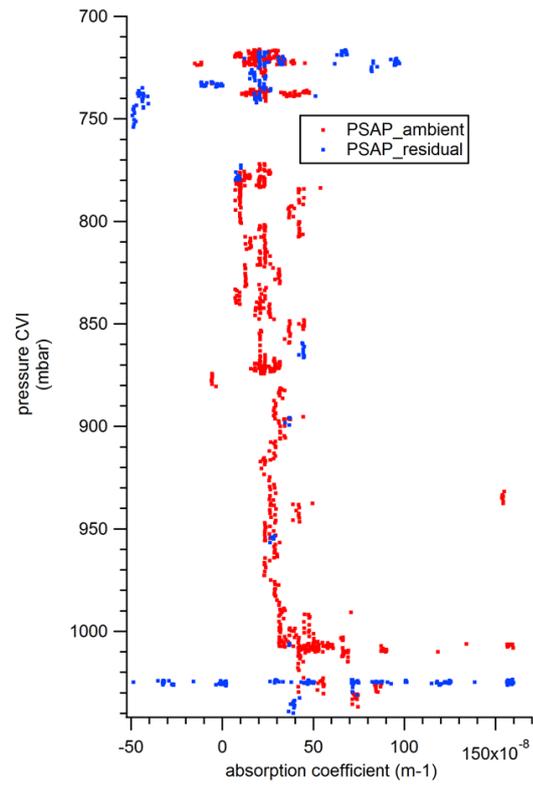
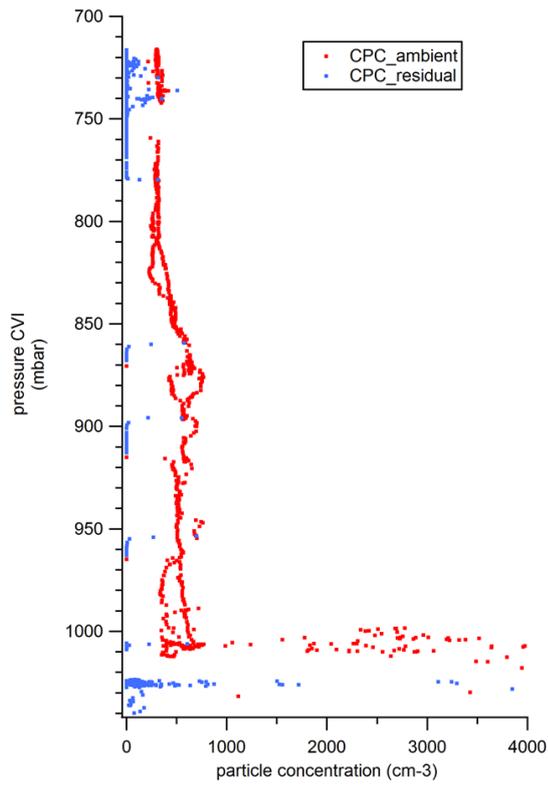


### Ambient particle size distribution:



### CVI





**PMS probes:**

Only short cloud measurements were done during this flight, so no significant and representative data from the PMS probes.