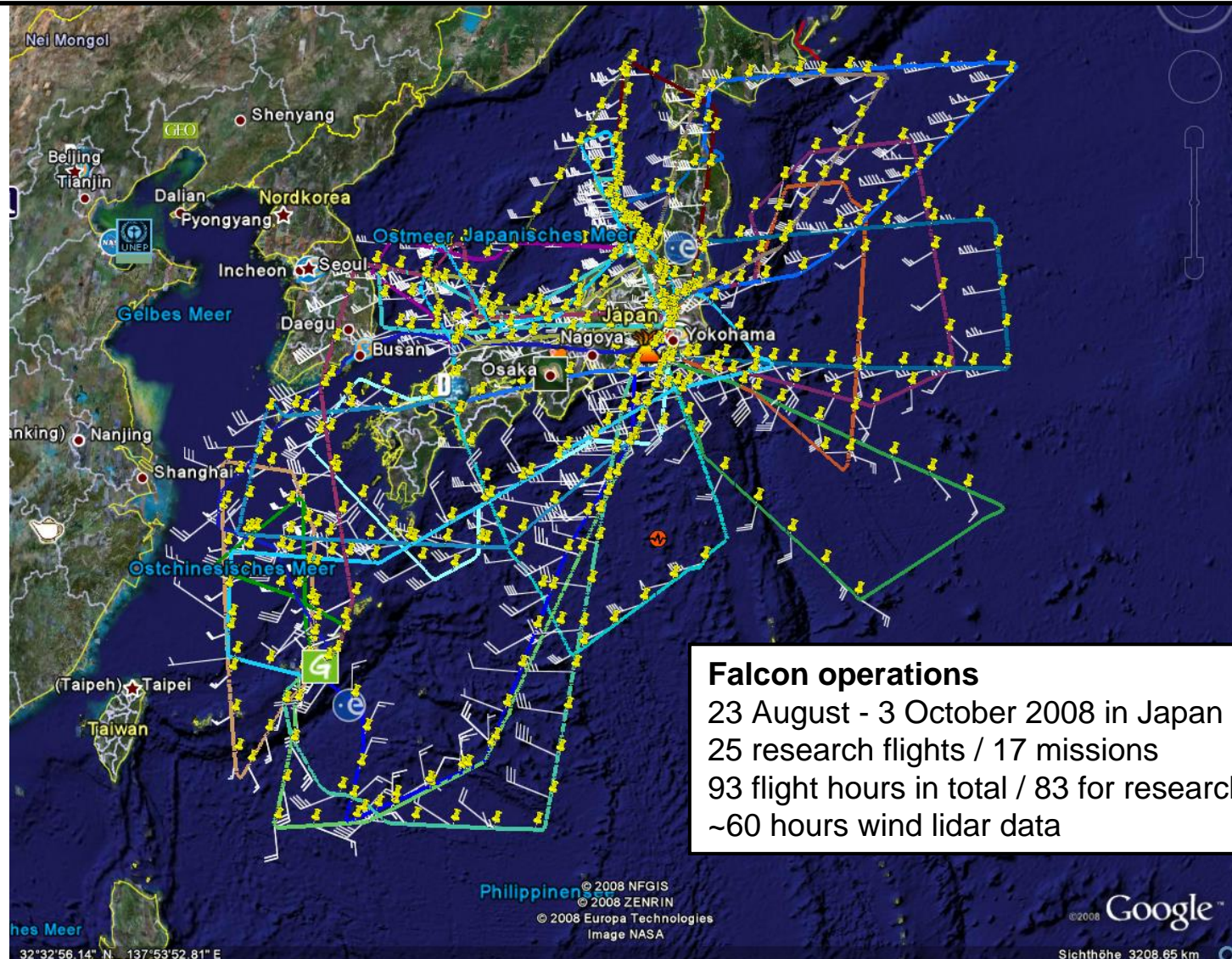


T-PARC Falcon operations





T-PARC Falcon data set

dropsonde data: quality control at NCAR

in-situ data and GoogleEarth tracks: available at <ftp://ftp.pa.op.dlr.de/pub/TPARC//>

wind lidar data: (expected to be finished by June)

- no data on first flights, all flights from 11 September OK

- lower quality before 18 September (GPS issue)

- all days processed except 17 September

- ongoing: filtering of data

- ASCII format

DIAL water vapour lidar: (6 days finished, expected to be finished by June)

- available: 1, 3, 9b, 18a, 20 Sept. and 1. Oct

- days of particular interest can be processed first

- few days with laser issues (visible on quicklooks in field catalog)

- data also includes backscatter ratio $(\beta_{\text{mol}} + \beta_{\text{aer}}) / \beta_{\text{mol}}$

- NetCDF files for water vapour and backscatter ratio + quicklook

we will deliver a "clean" quality controlled data set, but for individual days we can reprocess the data to obtain higher coverage (lower quality or resolution), higher resolution or similar

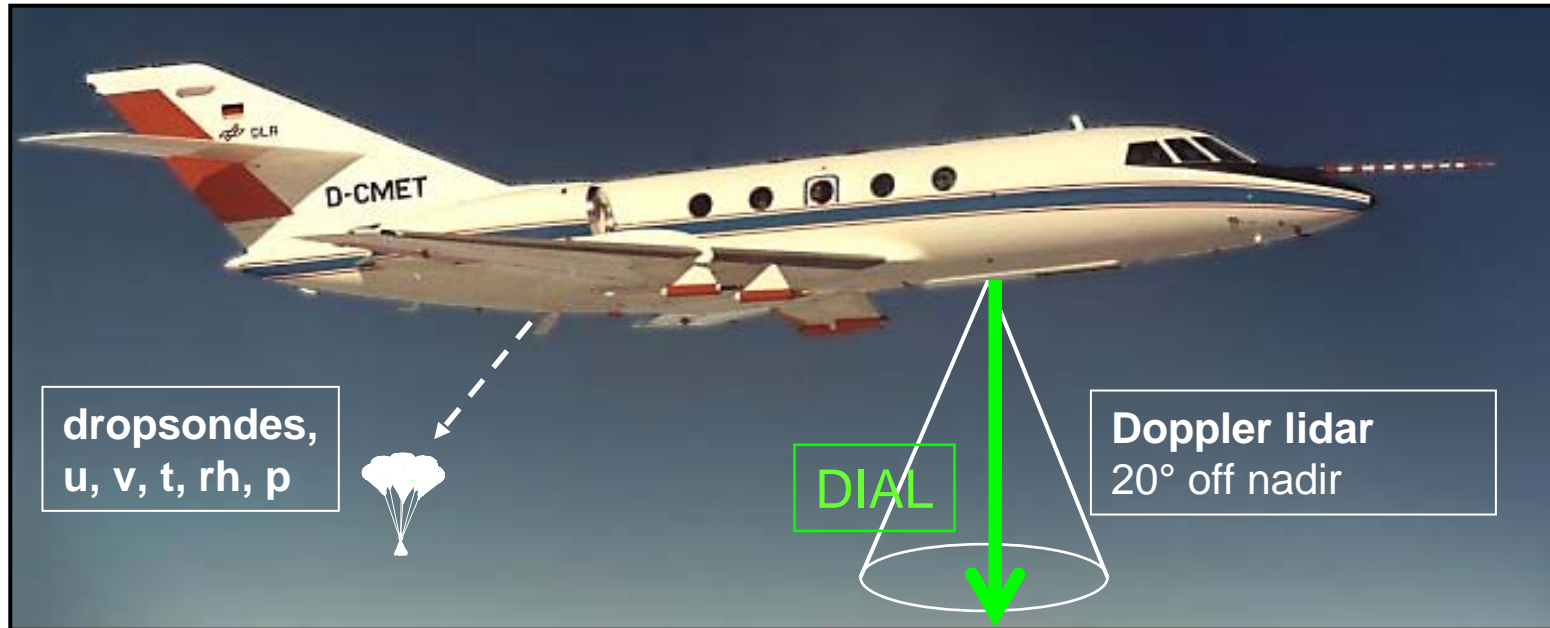
we would like to have a list of users working with the data (in case quality issues arise...)

HSRL aerosol information: available on request (or other quantities as e.g. depolarization...)

- optical depth can be calculated from HSRL data, possible on days with stable laser performance



Instrumentation



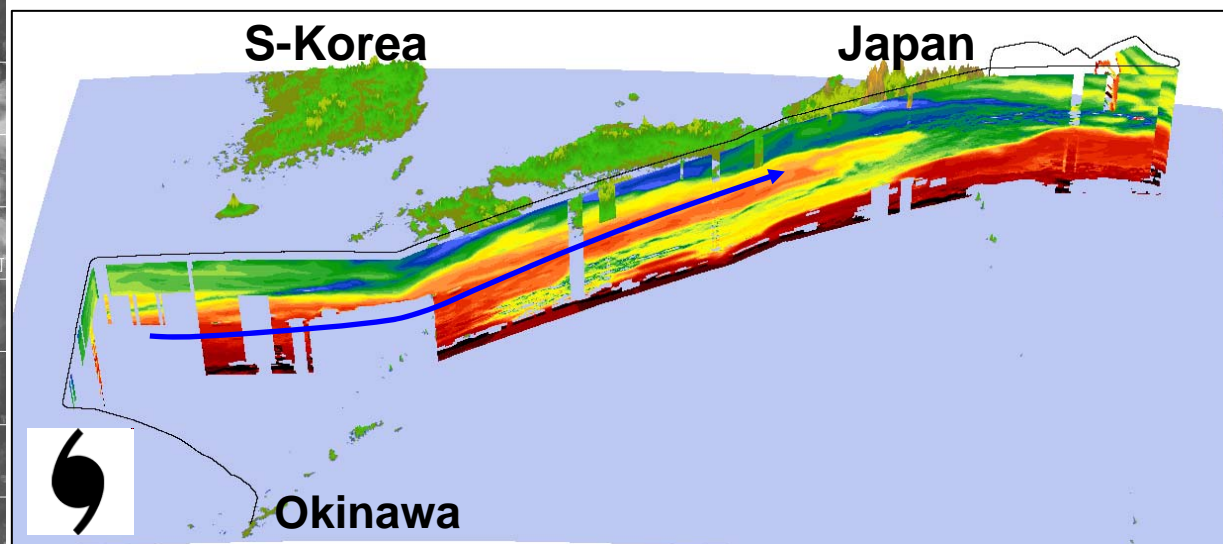
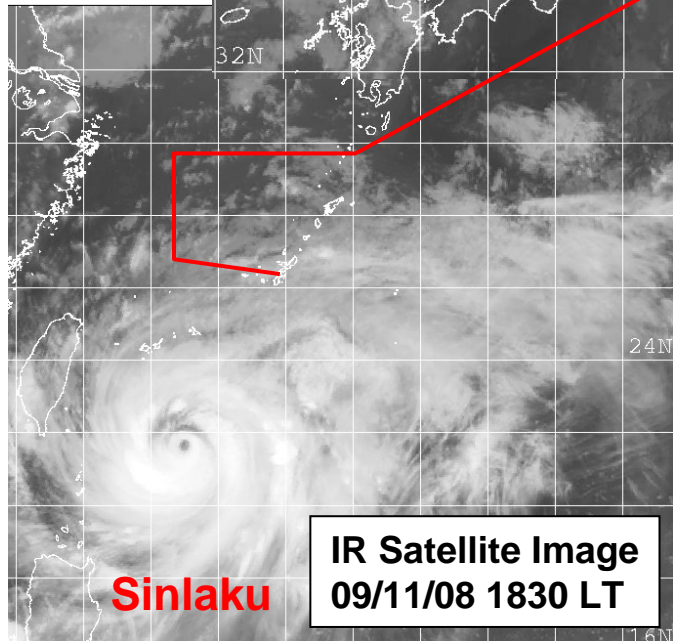
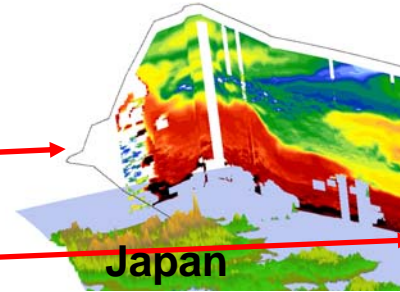
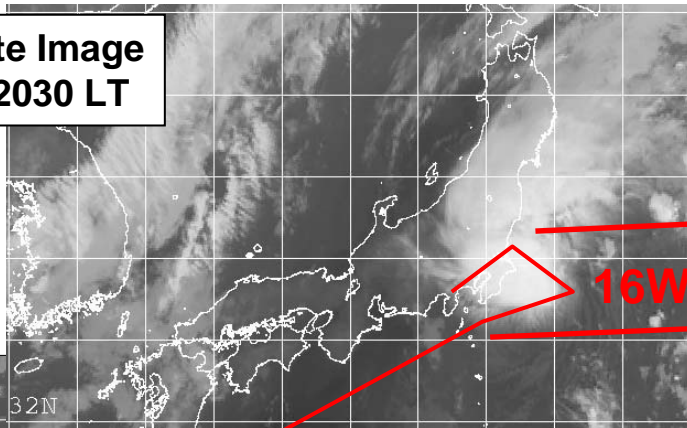
new 4 wavelength water vapour DIAL
 $\lambda \sim 920-945$ nm, 100 Hz, > 2 W
parameter: water vapour molecule number
(+height of cloud tops)
nadir pointing (zenith is possible)
horiz. resolution: 2 - 40 km
vert. resolution: 300 - 500 m
accuracy: 5-10 %

+ HSRL for aerosol

scanning coherent 2 μ m Doppler lidar:
conical scans with 24 positions
→ 24 LOS observations ($\sim 30/54$ s)
→ vertical profile of 3-D wind vector
horiz. resolution 5 - 40 km
vert. resolution 100 m
range: 0.5-12 km
accuracy: 0.5-1 m/s

Water vapour lidar observations (11 Sept. 2008)

IR Satellite Image
09/11/08 2030 LT



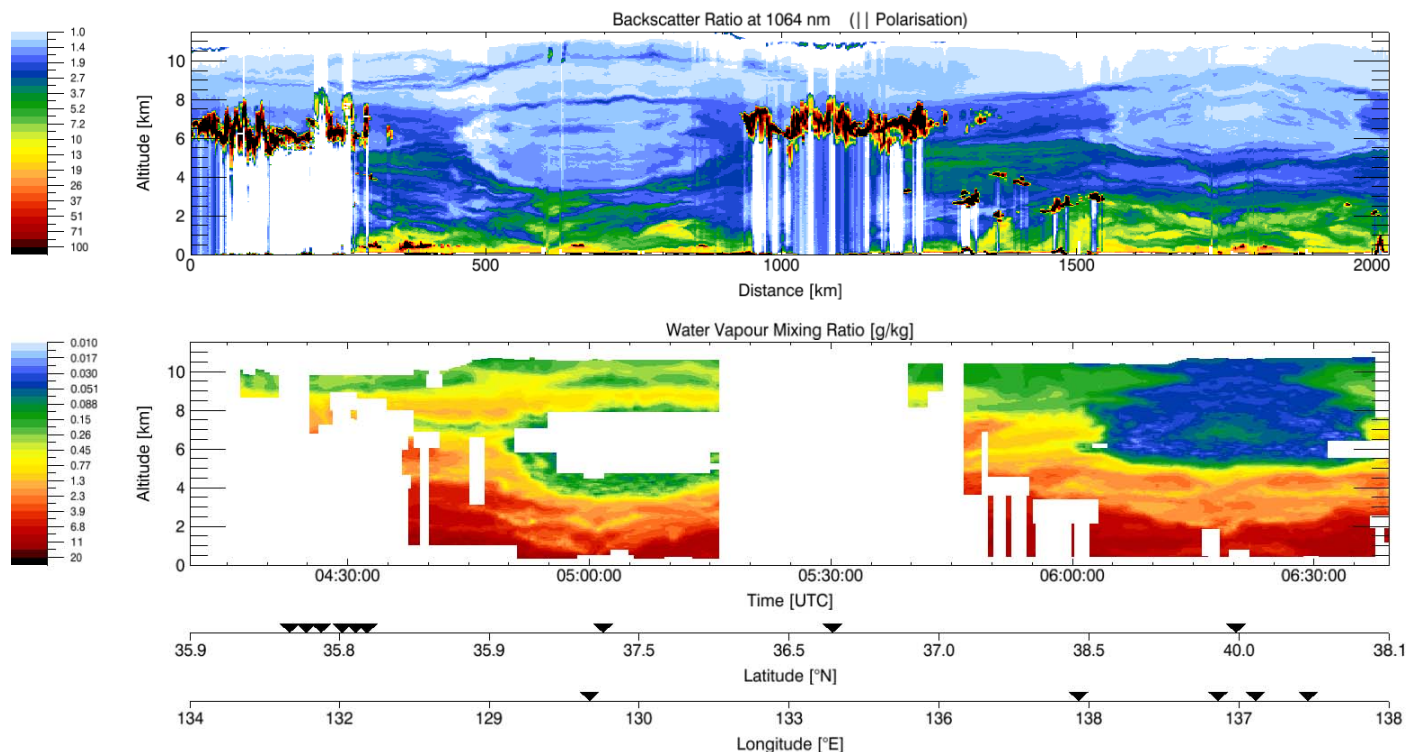
source of satellite images: https://www.fnmoc.navy.mil/tcweb/cgi-bin/tc_home.cgi/



WALES

T-PARC 18-09-2008

Flight 15 Atsugi - Atsugi



no data beneath clouds (more sensitive to clouds than wind lidar)

areas where concentrations are too low/high (processing may be possible with lower resolution or lower quality)

we do not delete values beneath zero - this could lead to a bias if there are random fluctuations around a very small value (averaging is better than deleting everything beneath zero)



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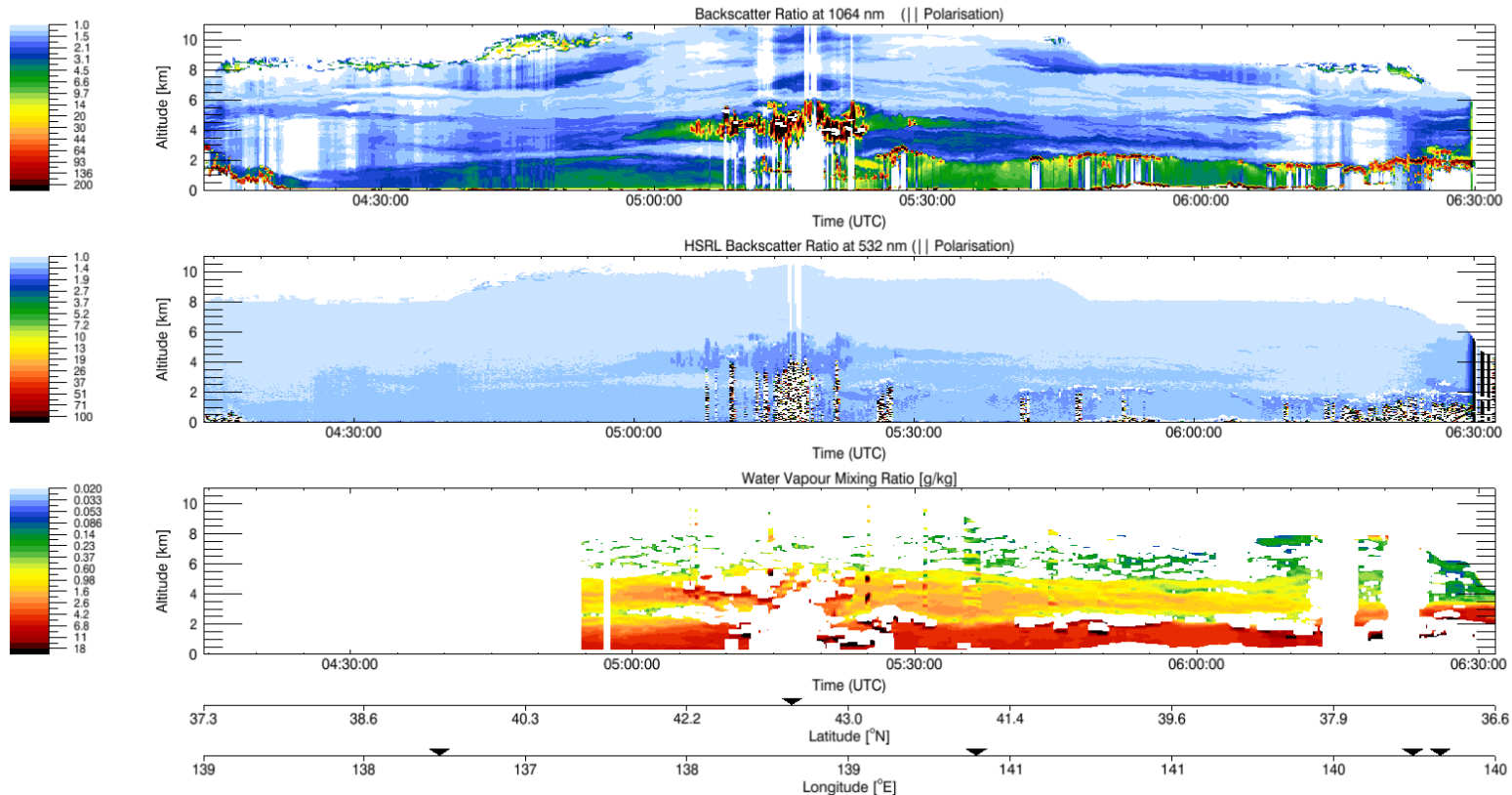
21 August 2008



WALES

T-PARC 30-09-2008

23. Flight / Atsugi - Atsugi Jangmi-Mission 4



Preliminary quick-look data. Processed on 30-09-2008 Contact: DLR Institute of Atmospheric Physics Gerhard.Ehret@dlr.de

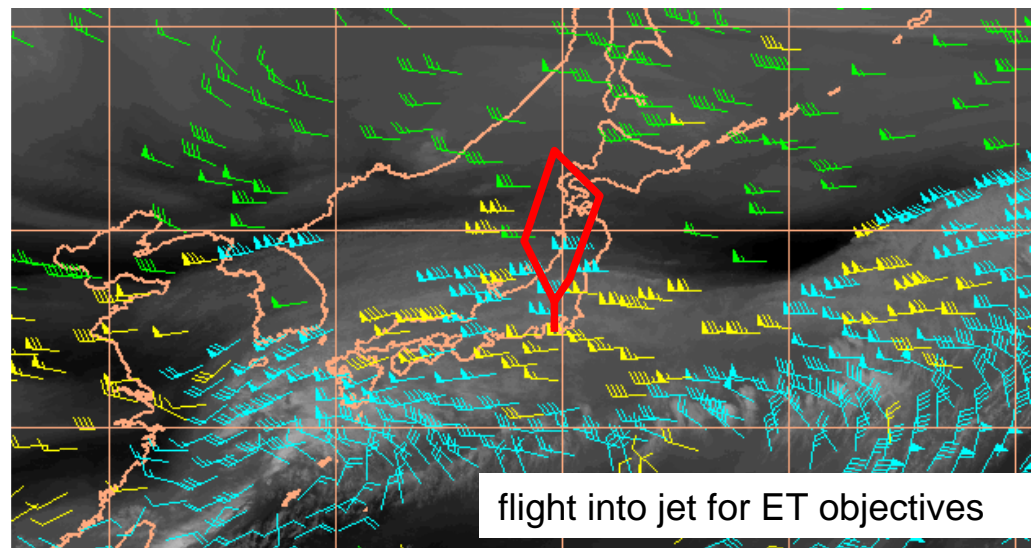
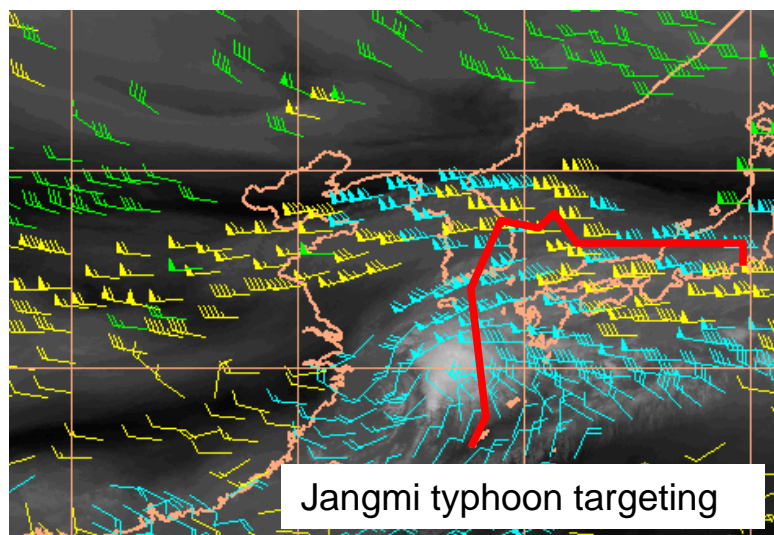
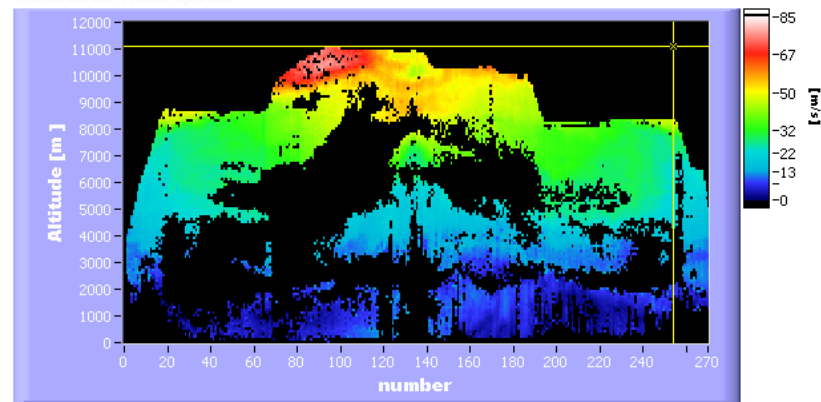
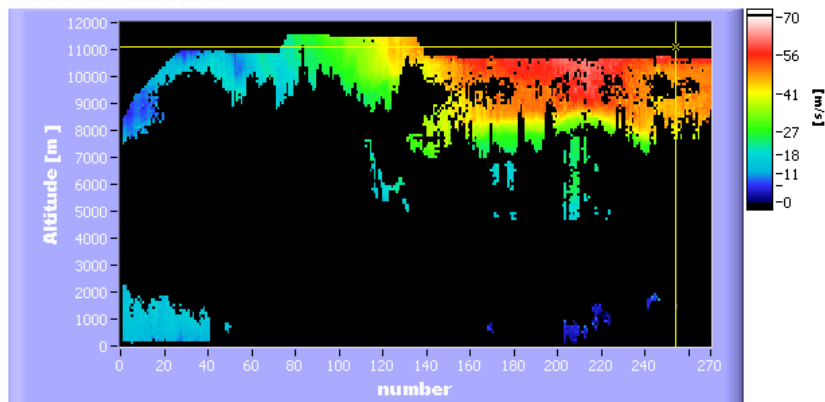
a few days with laser issues



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21 August 2008

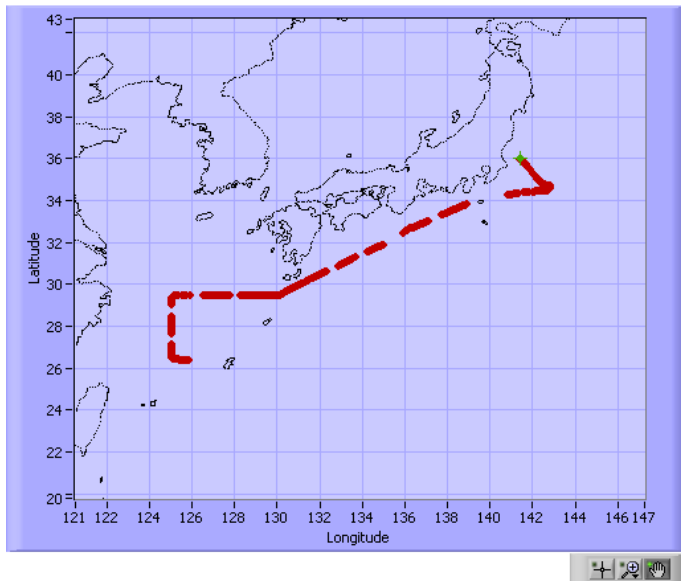
Wind lidar observations (30 Sept 2008)



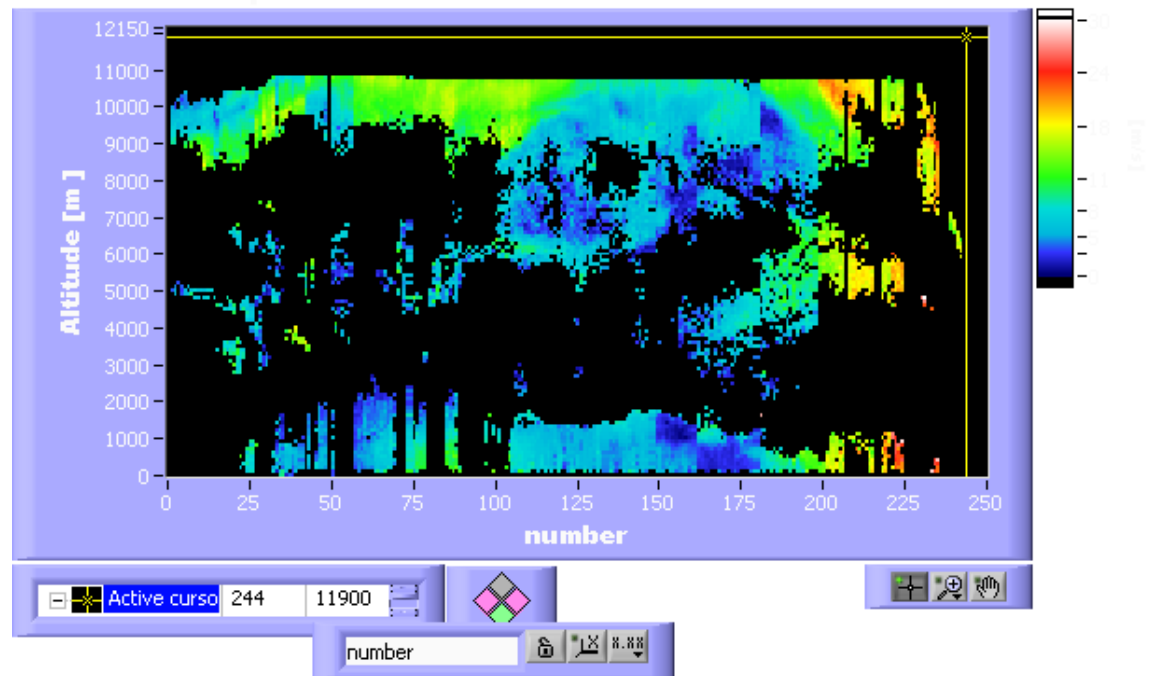
no data beneath clouds or in air with low aerosol content

Period 11-17 September: GPS blackouts

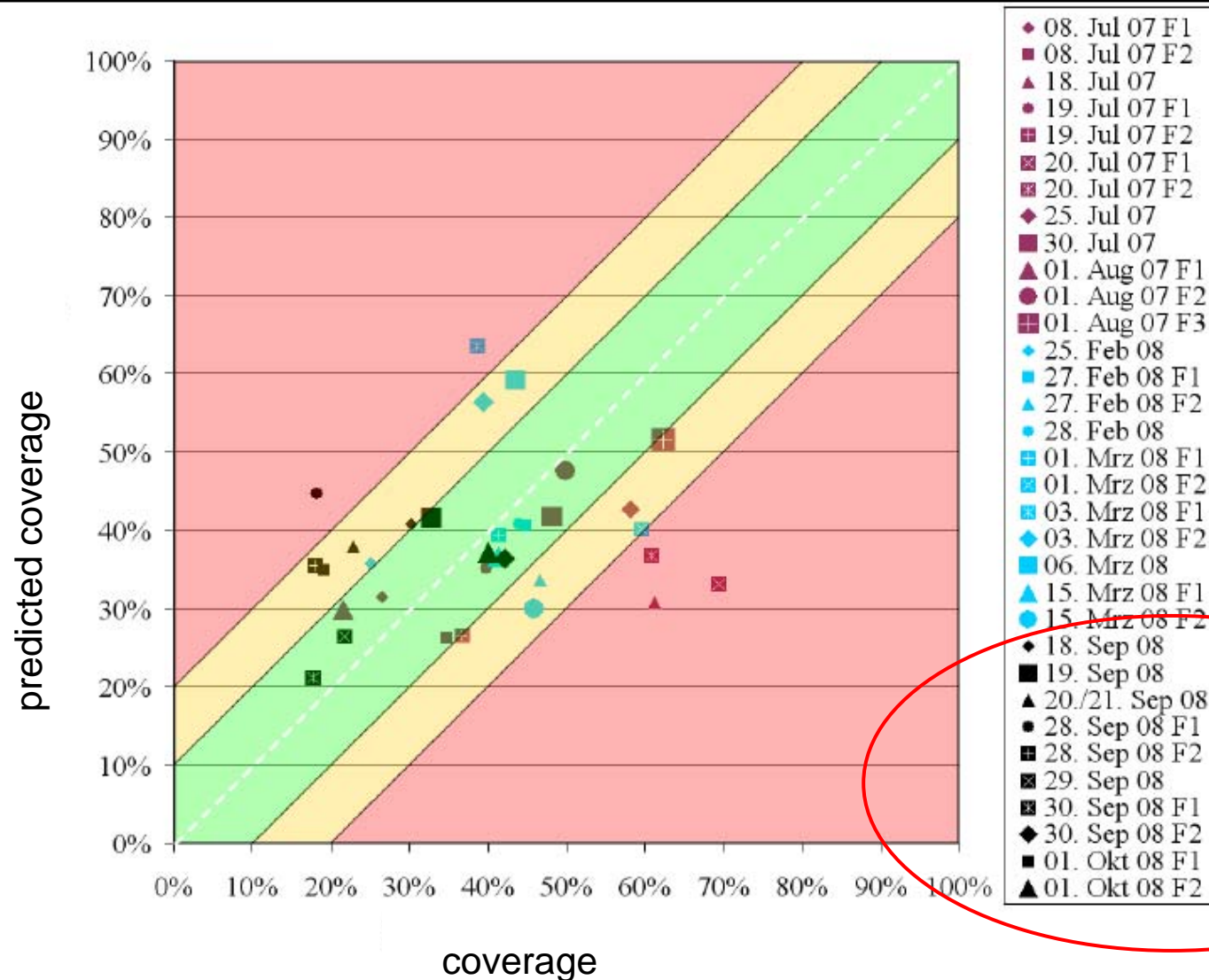
Course Plot



Horizontal Wind Speed



Wind lidar coverage (30 Sept 2008)





Data from the airborne 2µm scanning Doppler lidar of DLR
Contact: Stephan.Rahm@dlr.de

Observation date: 1.10.2008
Mission: Hinflug

Vertical resolution: 100 m
Number of profiles: 304
Number of vertical levels: 120
Default value: -999.00
Delimiter: tabulator
Time: milliseconds from 00:00 UTC

Qualitätskriterien Median:
Size median: 5
Bruchteil gute Werte: 0,20
Untergrenze Wind [m/s]: 0,0
Obergrenze Wind [m/s]: 50,0
Akzeptanzbereich Median [m/s]: 5,0

Qualitätskriterien Accumulation:
Schwelle Rafas: 3,8
Sigma Rafas: 3,0
SNR Spektrum: 1,5

Qualitätskriterien Inversion:
Gemittelte Vektoren: 3

Time since midnight [msUTC]	Latitude [deg]	Longitude [deg]	Altitude [m]	Horizontal velocity aircraft [m/s]
20285082	34,7148250	139,4019374	2820,4 154,6 1,0 180,9	-10,5 2 20
Altitude [m]	North [m/s]	East [m/s]	Down [m/s]	
0	-999.0	-999.0	-999.0	
100	-999.0	-999.0	-999.0	
200	-999.0	-999.0	-999.0	
300	-999.0	-999.0	-999.0	
400	-999.0	-999.0	-999.0	
500	-999.0	-999.0	-999.0	
600	-999.0	-999.0	-999.0	
700	-999.0	-999.0	-999.0	
800	-999.0	-999.0	-999.0	
900	-999.0	-999.0	-999.0	
1000	-999.0	-999.0	-999.0	
1100	-999.0	-999.0	-999.0	
1200	-999.0	-999.0	-999.0	
1300	-999.0	-999.0	-999.0	
1400	-999.0	-999.0	-999.0	
1500	-999.0	-999.0	-999.0	
1600	-999.0	-999.0	-999.0	
1700	-999.0	-999.0	-999.0	
1800	-999.0	-999.0	-999.0	
1900	-999.0	-999.0	-999.0	

