2. STA FILE

The data is averaged over 10 minutes.

STA files contain the daily statistical measurements.

STA file name is time stamped as describe below:

WLS7-XXXX_YYYY_MM_DD__hh_mm_ss.sta

      - WLS7-XXXX: WINDCUBEv2 serial number

      - YYYY: year of data

      - MM: month of data

      - DD: day of data

      - hh_mm_ss: time of the first data registered in file.
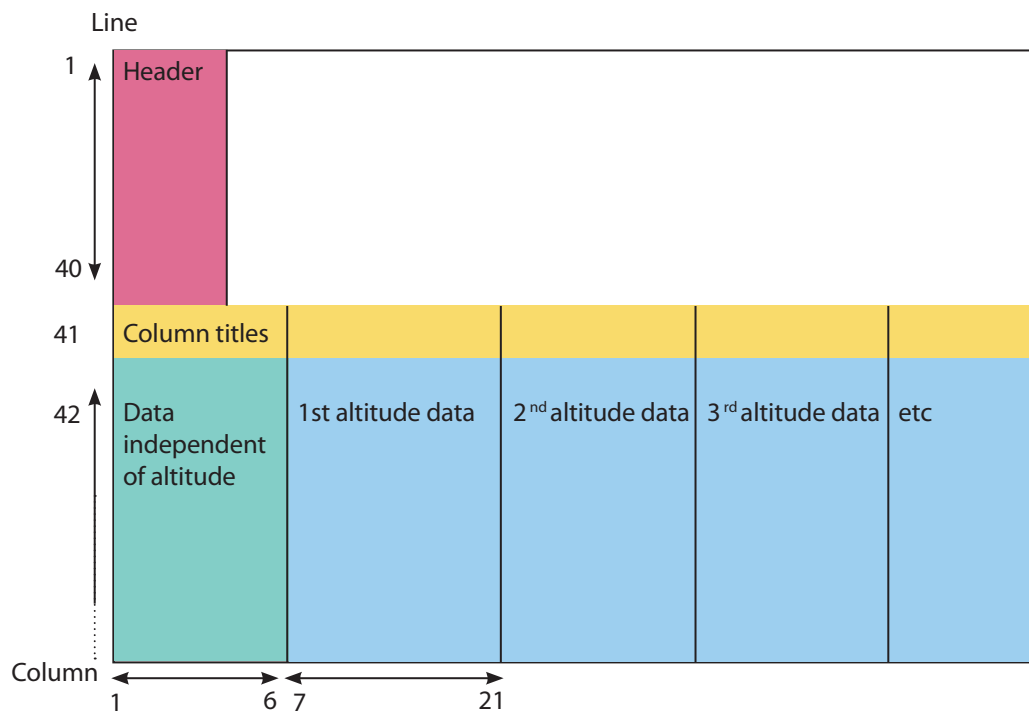
STA file structure is described below:

Fig. 41 – STA file scheme

	A	B	C	D	E		I	J	K	L	M	N
1	HeaderSize=39					General system information						
2	Version=											
3	ID System=WLS7-0091											
4	ID Client=LEO											
5	Location=Orsay											
6	GPS Location=											
7	Comments=V2.0											
8												
9	Windcube Parameters(Leosphere internal use only)					WINDCUBEv2 parameters. For diagnostic purposes only.						
10	********************											
11	Sampling Frequency (Hz)=250000000.000											
12	Ref Frequency (Hz)=68000000.000											
13	Pulses / Line of Sight=20000											
14	Samples / Pulse=1024											
15	Reflected Pulse Start=73											
16	Reflected Pulse End=147											
17	Ref pulse samples nb=1											
18	Nb High Pass Filter Points=5											
19	FFT Window Width=50											
20	Scan Cone Angle (°)=28.000											
21	Laser Diode Current (mA)=1650											
22	Rotation Angle (°)=											
23	Init Drive Position (°)=90											
24	Pulse Repetition Rate(Hz)=30000.000											
25	Pulse Duration(s)=0.000											
26	Trigger Delay Time=0.000											
27	Wavelenght (nm)=1543.000											
28	ScanAngle (°)=28.000											
29	DirectionOffset (°)=0.000											
30	Declination (°)=87.900											
31	PitchAngle (°)=0.200											
32	RollAngle (°)=0.800											
33	CNRThreshold=-24.000											
34	VrThreshold (m/s)=1.700											
35	SigmaFreqThreshold (m/s)=j0.750											
36	WiperCNRThreshold=-19.000											
37	WiperAltitude (m)=100										Altitudes	
38	WiperDuration (ms)=1000.000											
39	Altitudes(m)=	40	60	80	100	120	140	160	180	200	220	250	280	300
40	********************											

Fig. 42 - STA file header detail

41	Timestamp	Int Temp(°C)	Ext Temp(°C)	Pressure(hPa)	Rel Humidity(%)	Wiper count
42	09/06/2010 08:10	30	14.8	985.5	96.9	0
43	09/06/2010 08:20	30	14.9	985.4	96.9	0
44	09/06/2010 08:30	30	15	985.4	97	0
45	09/06/2010 08:40	30	15.2	985.5	96.8	0
46	09/06/2010 08:50	30	15.3	985.6	96.6	0

Tm(°C):
Internal
temperature.

Wiper Count:
Number of wiper
activation.

Date:
Data timestamp. Timestamp is
relative to the end of the 10 minute
averaging intervals

T(°C), P(hPa), H(%):
External temperature, pressure and
humidity.
Parameters available with TPH option.

Fig. 43 - STA data independent of altitude

DATA DEPENDENT ON ALTITUDE

Wind measurements at a given altitude form a data set of 13 columns.
Data sets are separated by one empty column.

Detail of a data set:

Wind Speed (m/s): Horizontal wind speed

Wind Speed max (m/s): Maximum horizontal wind speed

X-wind (m/s): Wind vector projection along x-axis

Y-wind(m/s): Wind vector projection along Y-axis

40m Wind Speed (m/s)	40m Wind Speed Std Dev(m/s)	40m Wind Speed max(m/s)	40m Wind Direction(°)	40m X-wind (m/s)	40m X-wind Std Dev(m/s)	40m Y-wind(m/s)
1.75	0.46	2.99	37	1.33	0.48	1
1.4	0.35	2.34	14.7	1.23	0.38	0.32
0.98	0.43	2.01	356.8	0.92	0.44	-0.05
1.02	1.73	21.99	16.5	0.76	0.38	0.22
0.8	0.29	1.71	46.5	0.47	0.38	0.5
0.89	0.43	2.22	55	0.42	0.44	0.6

WindSpeedStdDev(m/s): Horizontal wind speed standard deviation

Wind Direction (°) : Wind direction

X-wind Std Dev (m/s): X-wind standard deviation

Fig. 44 - STA data dependent on altitude

Y-wind Std Dev (m/s):
Y-wind standard
deviation

Z-wind Std Dev (m/s):
Z-wind standard
deviation

CNRmin(dB):
Minimum CNR

Data Availability (%):
Data availability

40m Y-wind Std Dev(m/s)	40m Z-wind(m/s)	40m Z-wind Std Dev(m/s)	40m CNR (dB)	40m CNR min (dB)	40m Dopp Spect Broad(m/s)	40m Data Availability(%)
0.52	0.34	0.34	-16.3	-20.6	2409419.61	100
0.56	0.45	0.28	-13.7	-19.6	2405249.28	100
0.33	0.24	0.37	-15.9	-19.5	2306484.25	100
1.8	0.33	0.39	-17.5	-20.7	2572684.79	100
0.31	0.4	0.32	-14.4	-18.5	2413658.82	100
0.48	0.08	0.26	-16.8	-19.5	2373057.02	100

Z-wind (m/s):
Vertical wind speed:Wind
vector projection along
z-axis
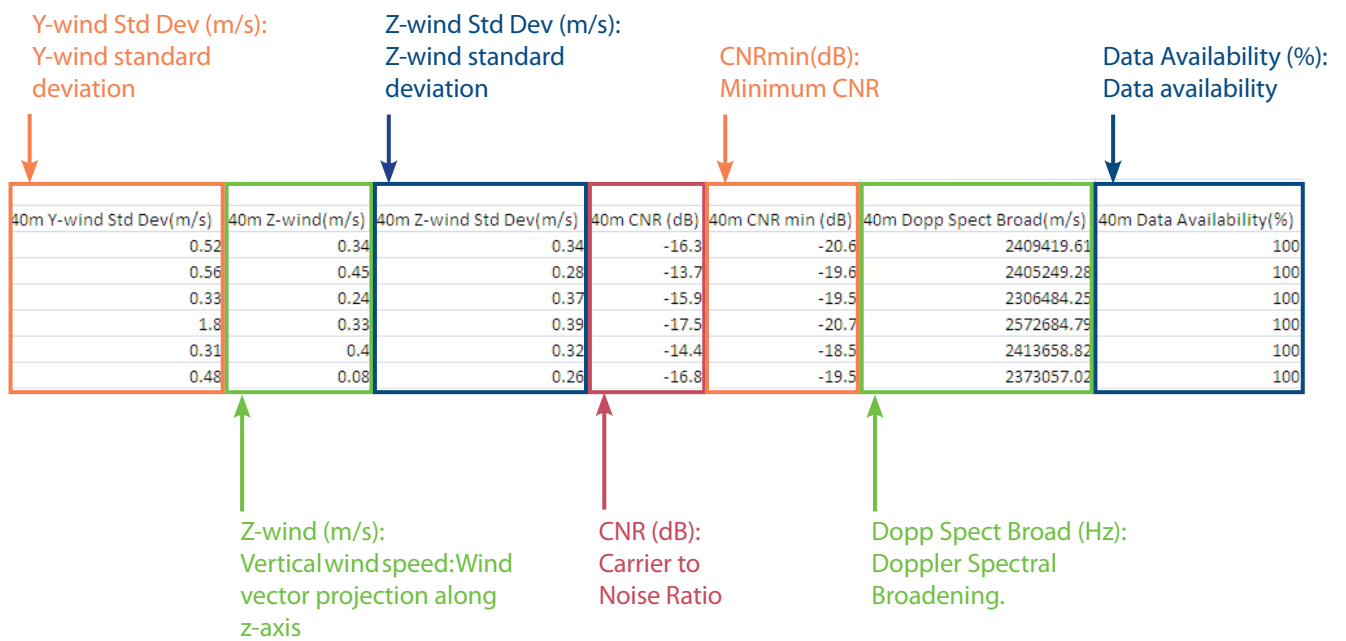
CNR (dB):
Carrier to
Noise Ratio

Dopp Spect Broad (Hz):
Doppler Spectral
Broadening.

Fig. 44 - STA data dependent on altitude