Workshop on Atmospheric Science and Connection with Related Science – ROME, CNR, 26-27 April 2006

Routine Meteorological Observation @ Station Concordia

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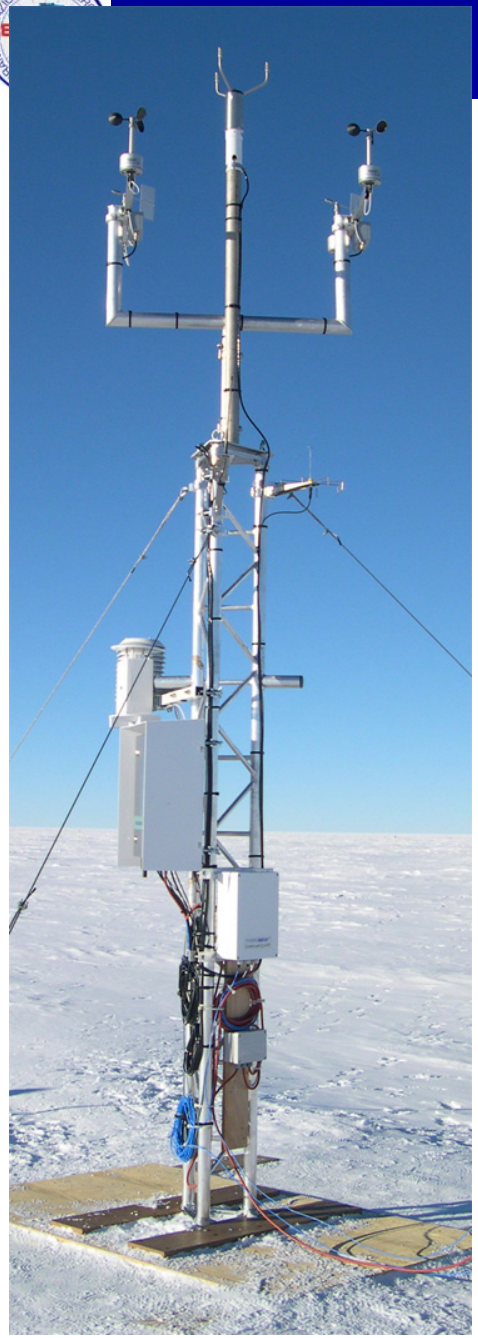
1 – PNRA SCrl
2 – ENEA CLIM

Concordia RMO

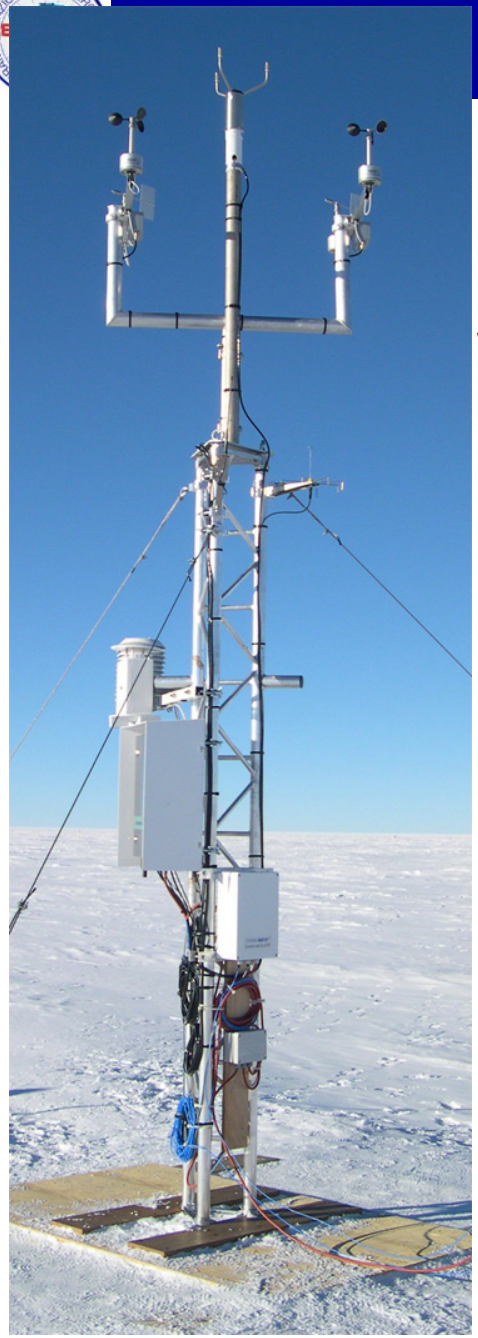


Homework:

1. Which atmospheric measurements have you done up to now ?
2. Which atmospheric measurements are needed in your field ?
3. Will it be possible to create a data base including the past measurements ?
4. Is it possible to realize an atmospheric observatory for these measurements ?
5. Who should be in charge for these measurements ?
6. Who should be in charge of creating a rational database ?
7. Which should be is the dissemination strategy ?

Concordia RMO

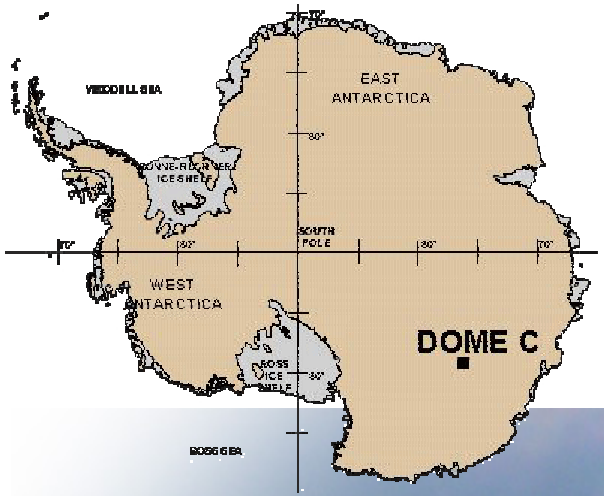
1. Which atmospheric measurements have you done up to now ?



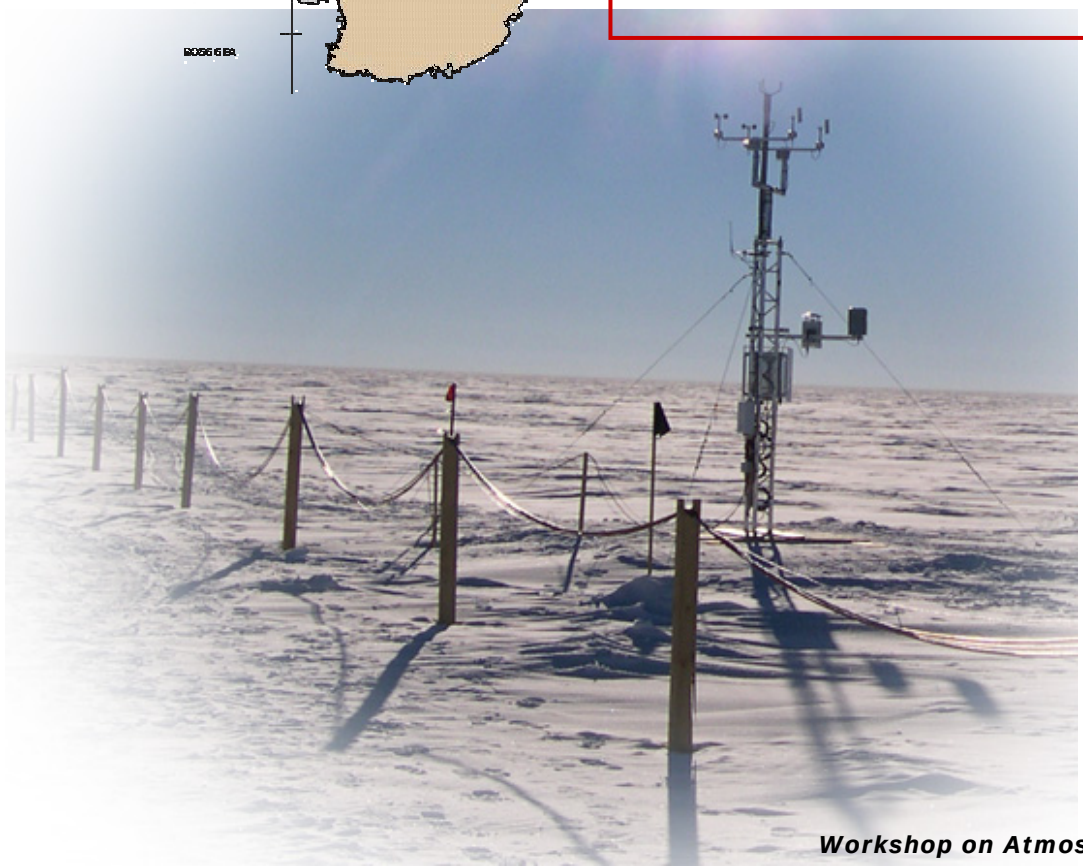
Weather Station

Radiosounding

AWS Concordia



Installation date:	**2005, January 30 (XX Exp.)**
Position:	**75° 06' S – 123° 18' E**
Model:	**Vaisala Milos 520**
Power:	**220 V**
Mast height:	**3 meters**
Local data storage:	**4 MB flash memory**



Wind speed and direction

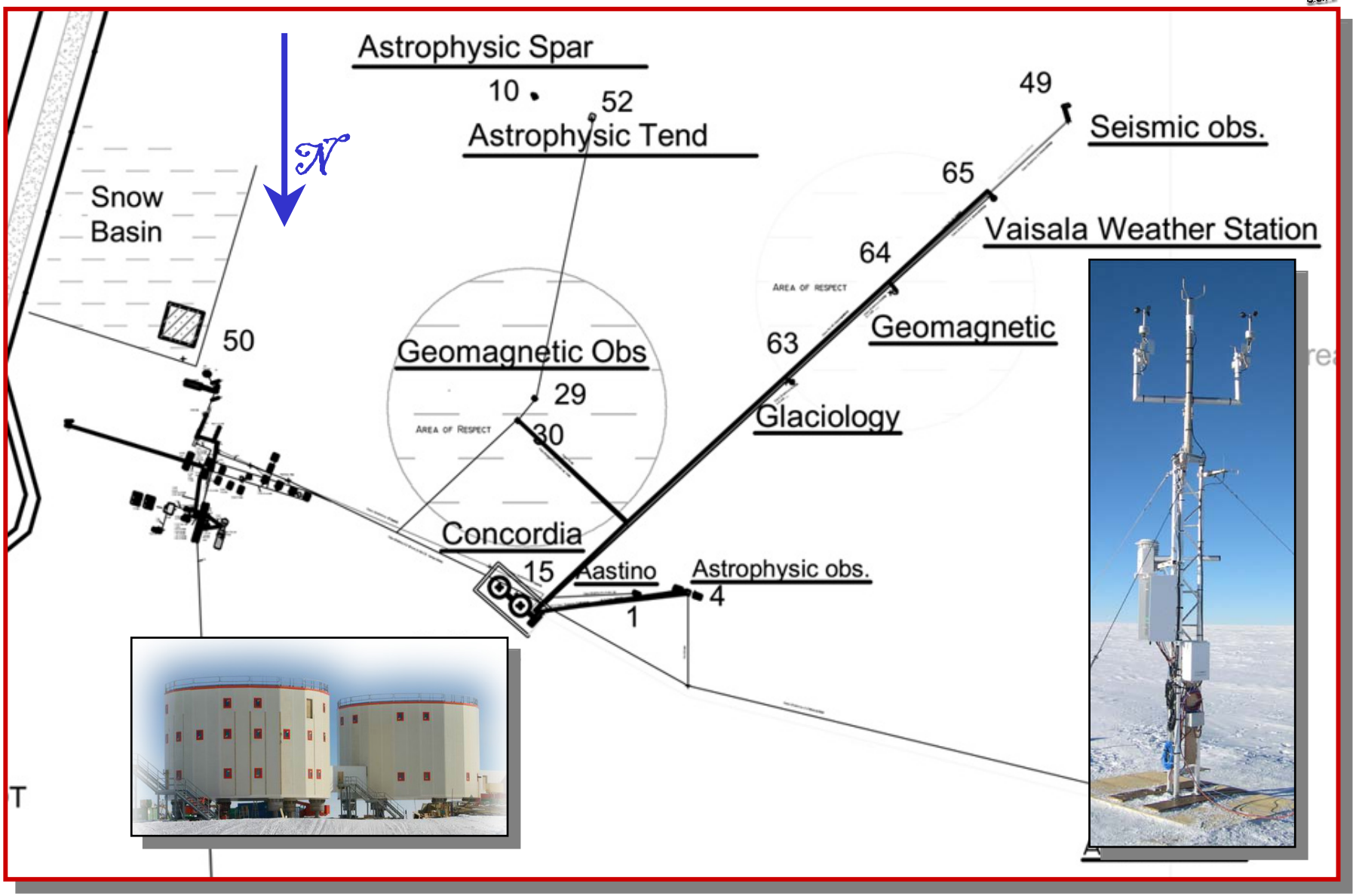
- 2 optoelettronic not heated sensors
- 2 optoelettronic heated sensors
- 1 sonic heated sensor

Temperature and Humidity

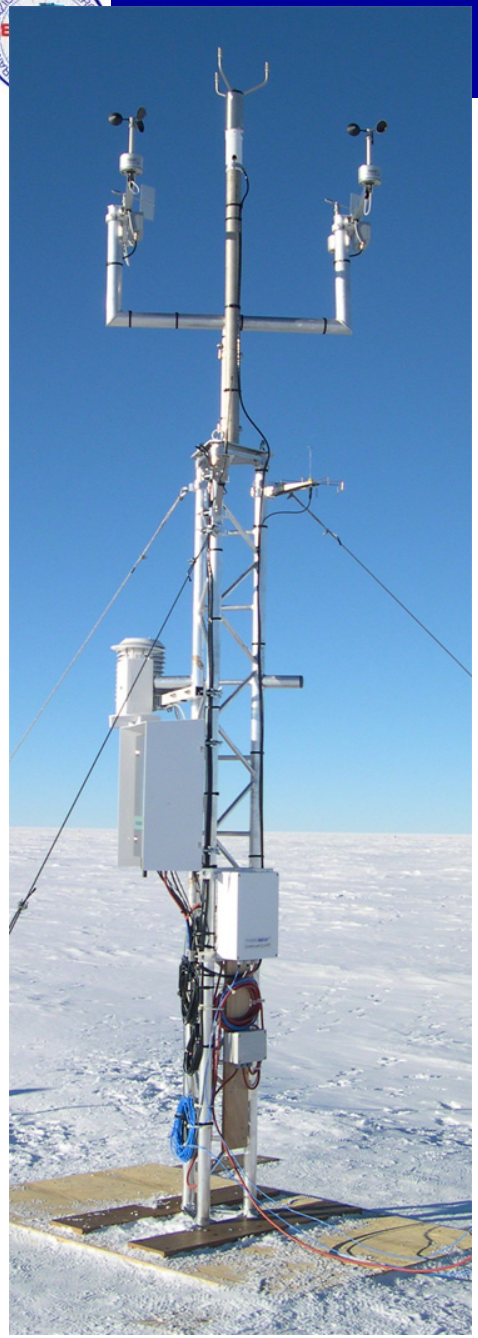
- traditional sensors
- Ventilated Thermohygrometer

Atmospheric Pressure

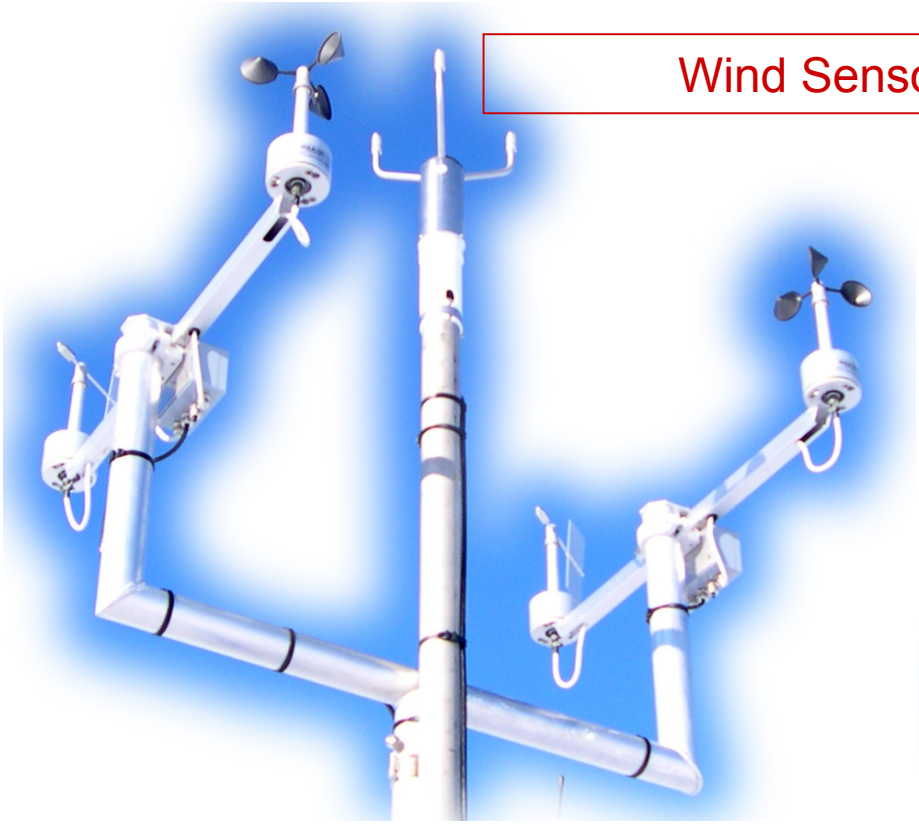
AWS Concordia



AWS Concordia

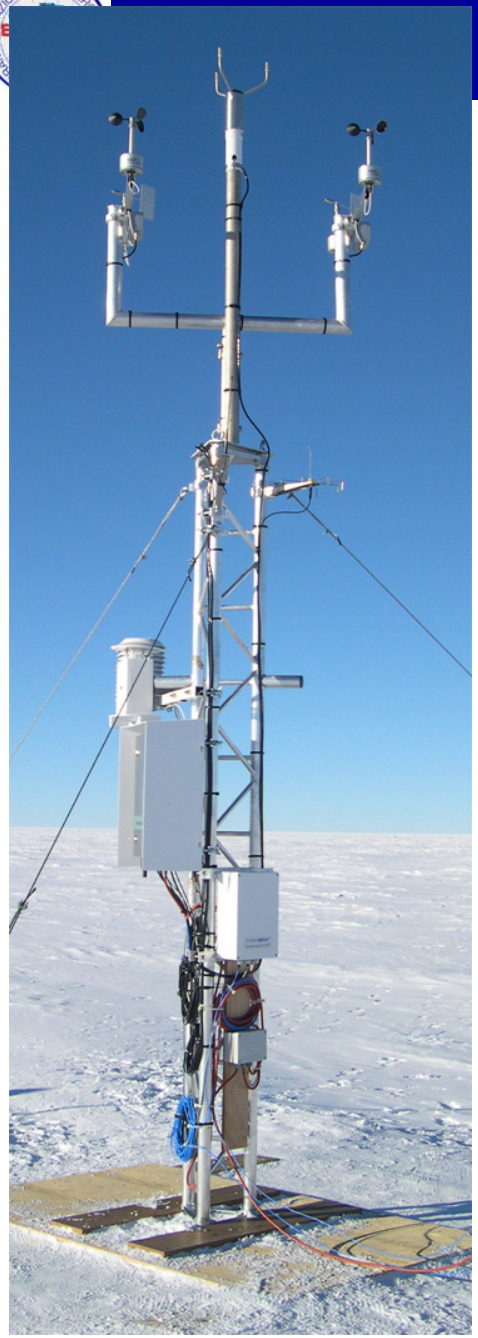


Wind Sensors

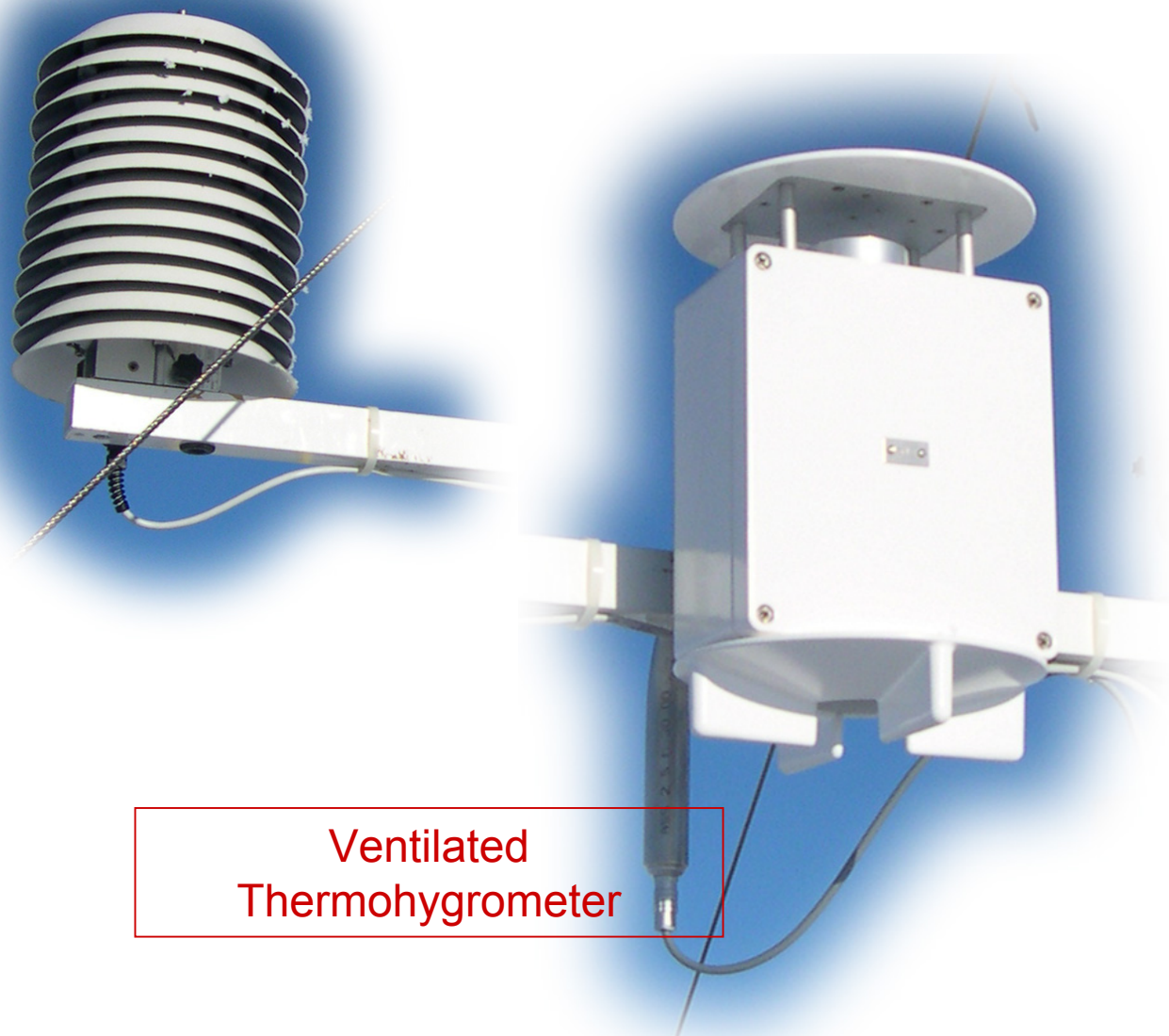


Sonic Wind Sensor

AWS Concordia

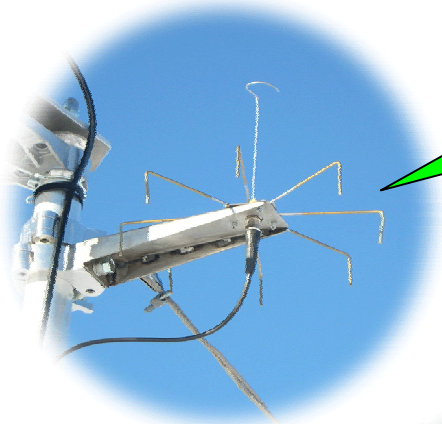


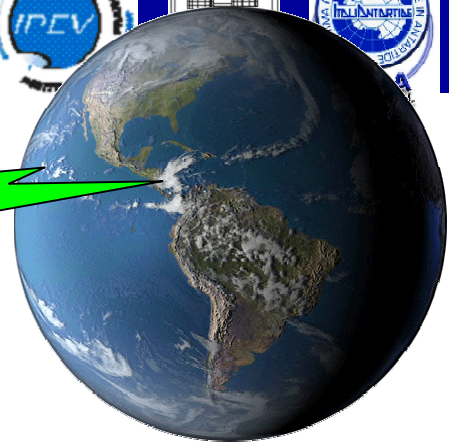
Temperature and Humidity Sensor



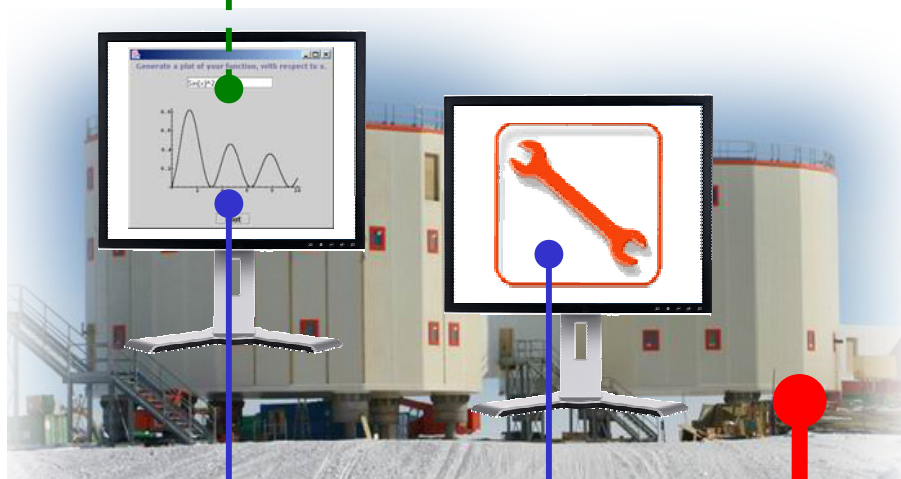
Ventilated
Thermohygrometer

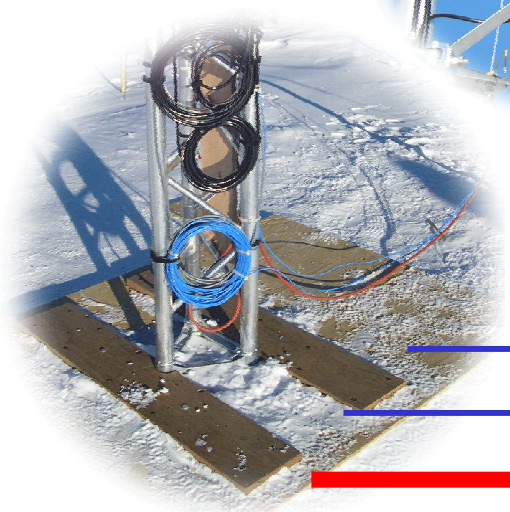
AWS Concordia





Radiomodem





RS 485

RS 485

220 V AC

AWS Concordia

Local Data Dissemination

Microsoft Excel

File Modifica Visualizza Inserisci Formato Strumenti Dati Finestra ?

Digitare una domanda.

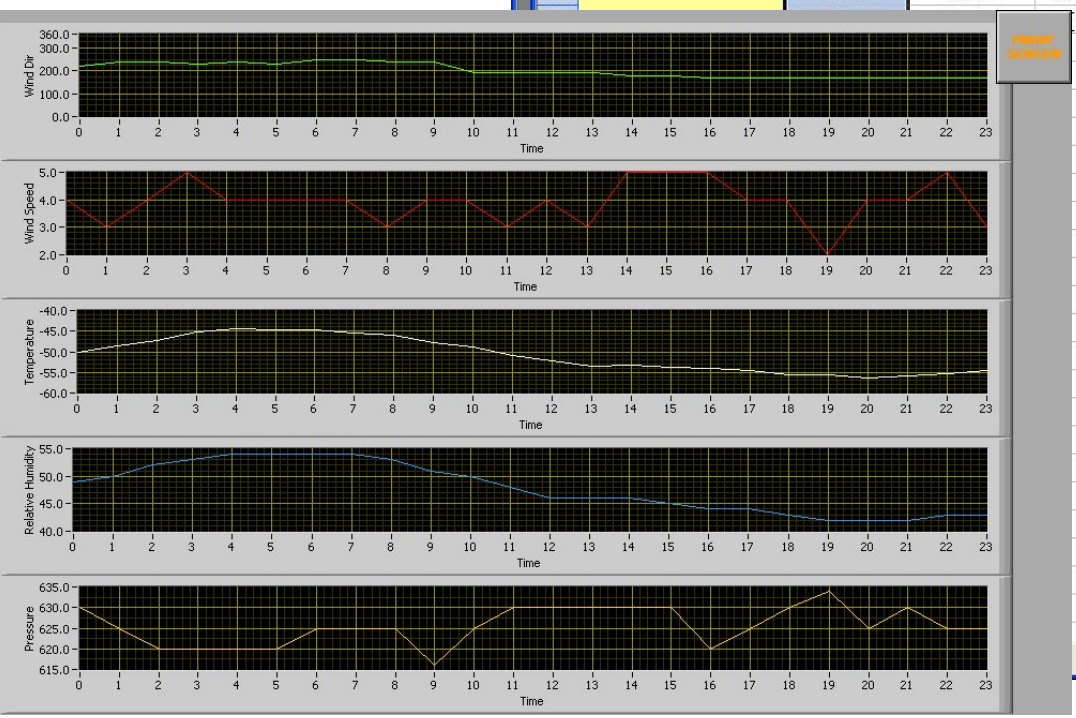
Arial 10 100%

C1 Wind Dir

060307.xls

	A	B	C	D	E	F	G	H	I	J	K	L
1	date	time	Wind Dir	Wind Speed	Wind Speed	Wind Dir	Wind Speed	Temp	Temp	Temp	Relative	
2			Cold	Cold	Cold Max	Hot	Hot	Inst	Average	Min	Humidity	
					[knots]	[gradi sess.]	[knots]	[°C]	[°C]	[°C]	%	
					3	220	4	-50	-49,6	-51	49	6452
					2	240	3	-48,7	-48,7	-50,3	50	6451
					4	240	4	-47,4	-47,1	-49,1	52	6450
					4	230	5	-45,3	-45,3	-47,4	53	6447
					4	240	4	-44,4	-44,4	-45,5	54	6446
					5	230	4	-44,8	-44,2	-44,9	54	6445
					4	250	4	-44,7	-44,3	-45,1	54	6445
					3	250	4	-45,4	-44,5	-45,5	54	6444
					4	240	3	-46	-45,2	-46,2	53	6445
					3	240	4	-47,7	-45,8	-47,7	51	6444
					3	190	4	-48,9	-47,5	-49	50	6443
					3	190	3	-50,9	-48,9	-51	48	6443
					2	190	4	-52,2	-50,7	-52,8	46	6443
					2	190	3	-53,6	-52,2	-53,6	46	6442
					3	180	5	-53,2	-52,9	-53,6	46	6442
					3	180	5	-53,8	-52,7	-53,8	45	6442
					3	170	5	-54	-53,5	-54,4	44	6441
					2	170	4	-54,5	-54	-55	44	6442
					2	170	4	-55,5	-54,5	-55,6	43	6442
					1	170	2	-55,7	-55,2	-56,3	42	6443
					1	170	4	-56,4	-55,5	-56,8	42	6442
					2	170	4	-55,8	-55,8	-57,1	42	6443

Somma=4920



Radiosounding

One radiosounding/day at 12:00 UTC

2005 (since 23/03): 194 launches

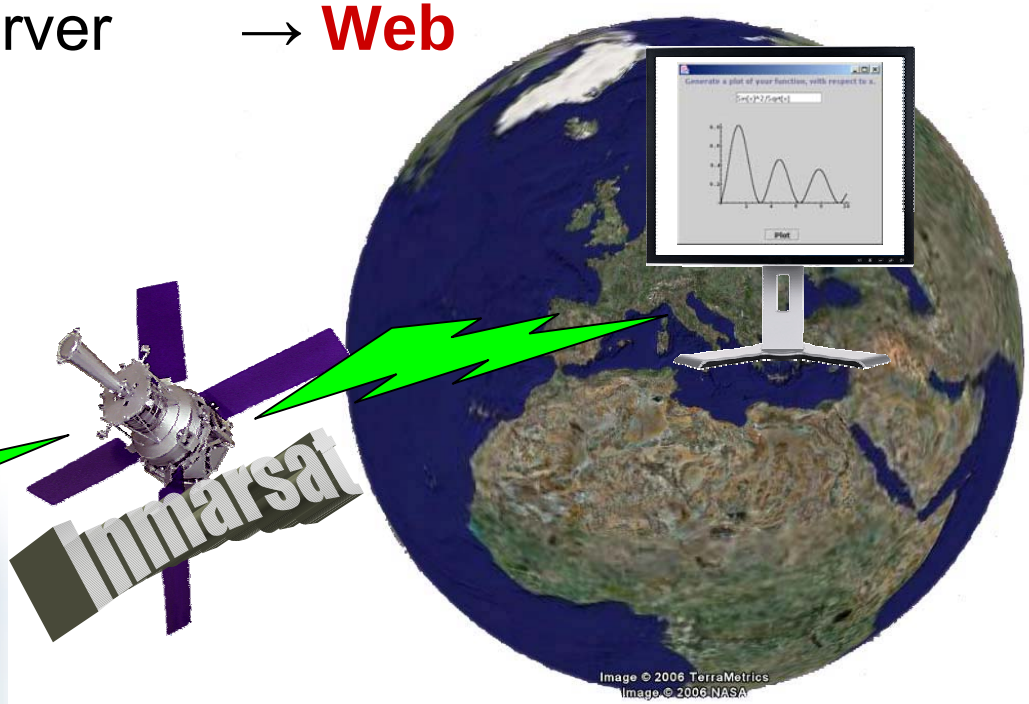
2006 (updated to 24/03): 110 launches

Concordia RMO

Data transmission to Europe:

to Meteoam.it FTP server → **GTS**

to Climantartide.it FTP server → **Web**

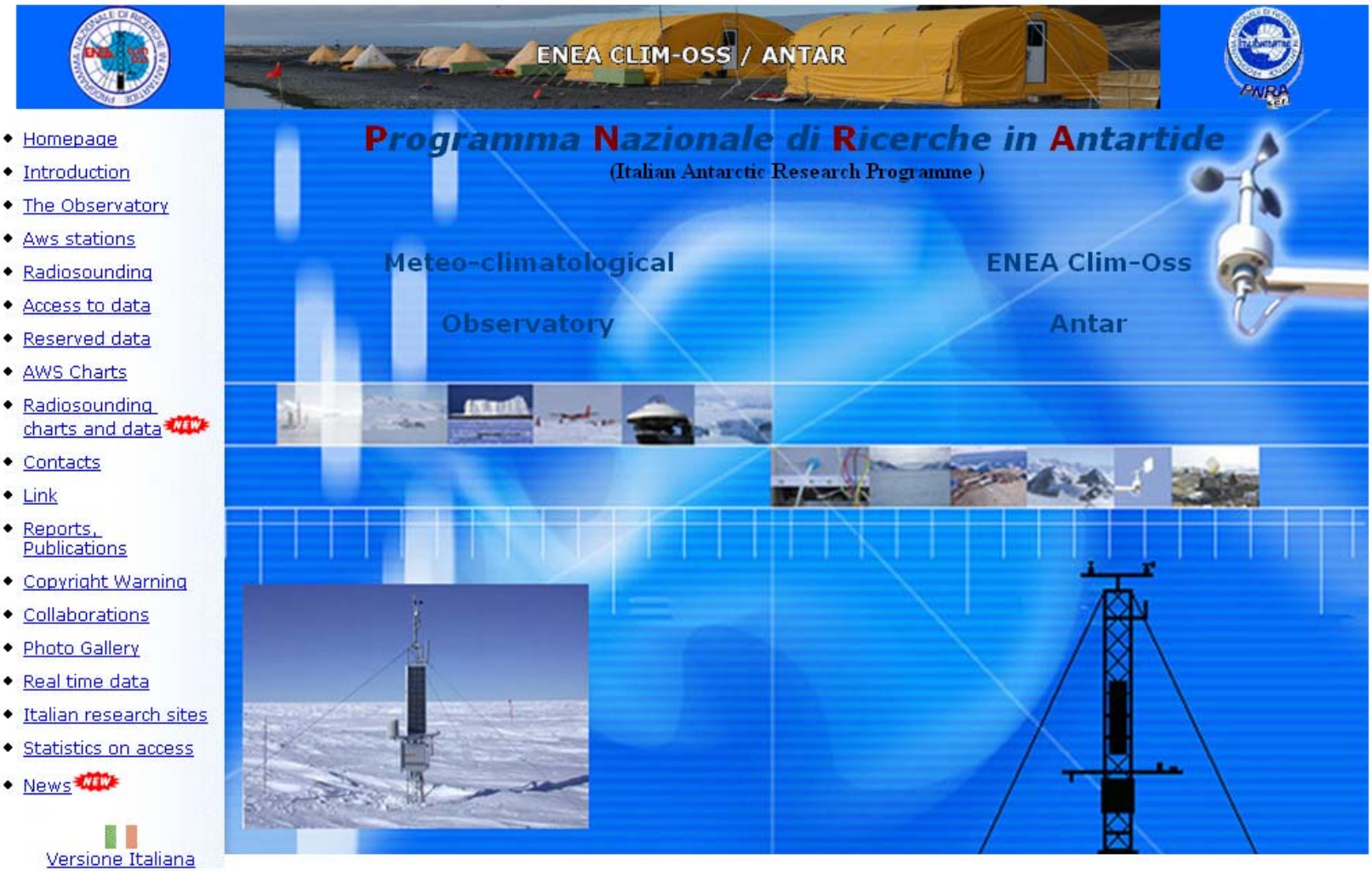


2. Which atmospheric measurements are needed in your field ?

ANY!!!

Concordia RMO

www.climantartide.it



Database and Archive

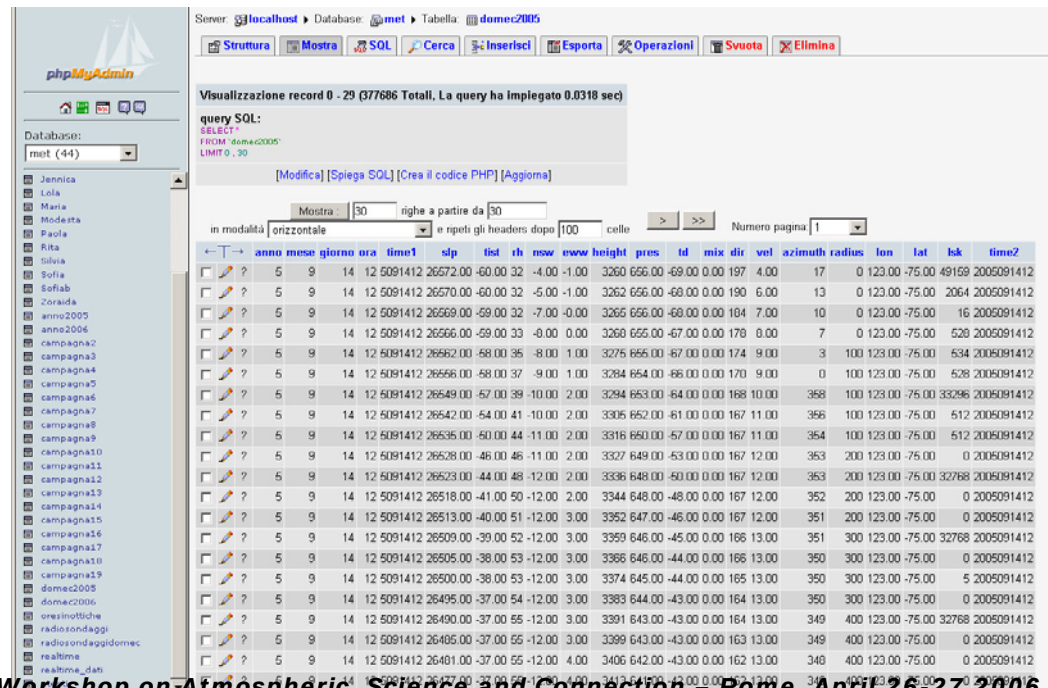
Microsoft Access - [anno2006 : Tabella]

File Modifica Visualizza Inserisci Formato Record Strumenti Finestra ?

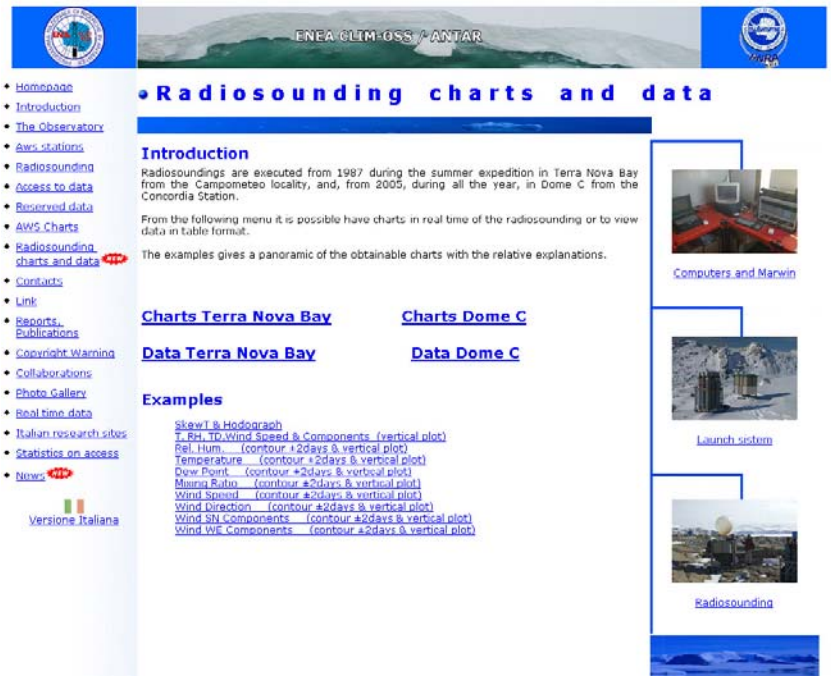
anno	mese	giorno	ora	time1	slp	tist	rh	nsw	eww	he
6	1	1	12	6010112	26525	-21	56	1,2	-3,9	
6	1	1	12	6010112	26522	-21,3	61	0,9	-3,4	
6	1	1	12	6010112	26518	-21,4	64	1	-3,7	
6	1	1	12	6010112	26512	-21,5	67	1,1	-4,1	
6	1	1	12	6010112	26506	-21,6	70	1,2	-4,5	
6	1	1	12	6010112	26500	-21,7	72	1,3	-4,9	
6	1	1	12	6010112	26494	-21,8	73	1,5	-5,2	
6	1	1	12	6010112	26488	-21,9	74	1,6	-5,6	
6	1	1	12	6010112	26481	-22	75	1,8	-5,9	
6	1	1	12	6010112	26474	-22,1	76	2	-6,1	
6	1	1	12	6010112	26467	-22,2	77	2,2	-6,4	
6	1	1	12	6010112	26461	-22,3	78	2,3	-6,6	
6	1	1	12	6010112	26455	-22,4	78	2,5	-6,7	
6	1	1	12	6010112	26448	-22,5	79	2,7	-6,8	
6	1	1	12	6010112	26443	-22,5	80	2,9	-6,9	
6	1	1	12	6010112	26439	-22,6	80	3	-7	
6	1	1	12	6010112	26435	-22,6	79	3,1	-7	
6	1	1	12	6010112	26429	-22,6	79	3,2	-7,1	
6	1	1	12	6010112	26423	-22,7	79	3,3	-7,1	
6	1	1	12	6010112	26416	-22,7	80	3,3	-7,1	

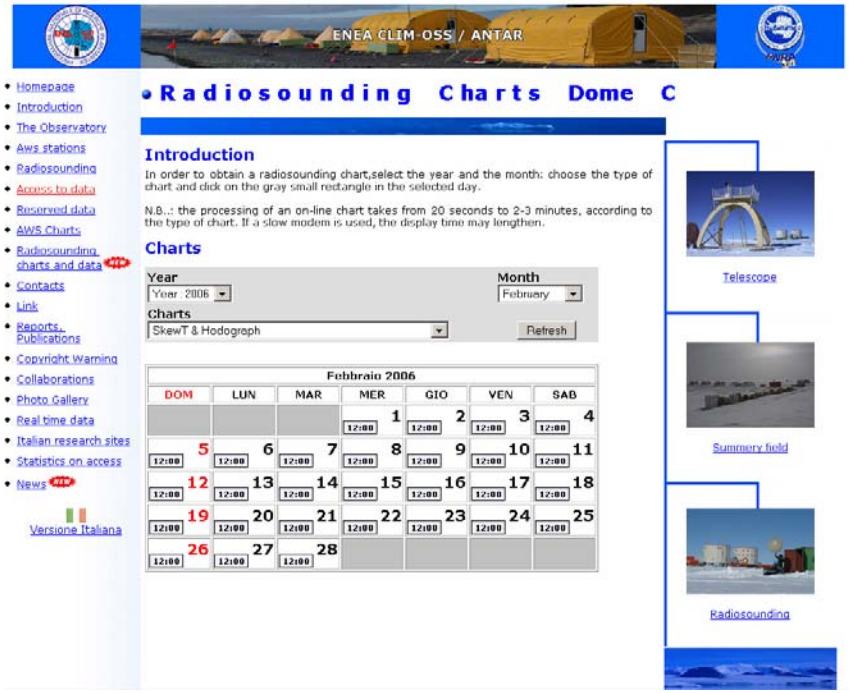
Storing Data

- Access database
- Mysql database
- Zip archive



Real-time Radiosounding Charts





Charts available in real time

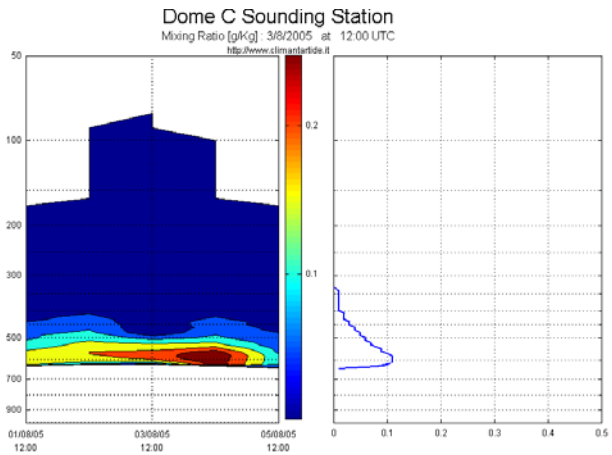
(10 to 30 seconds)

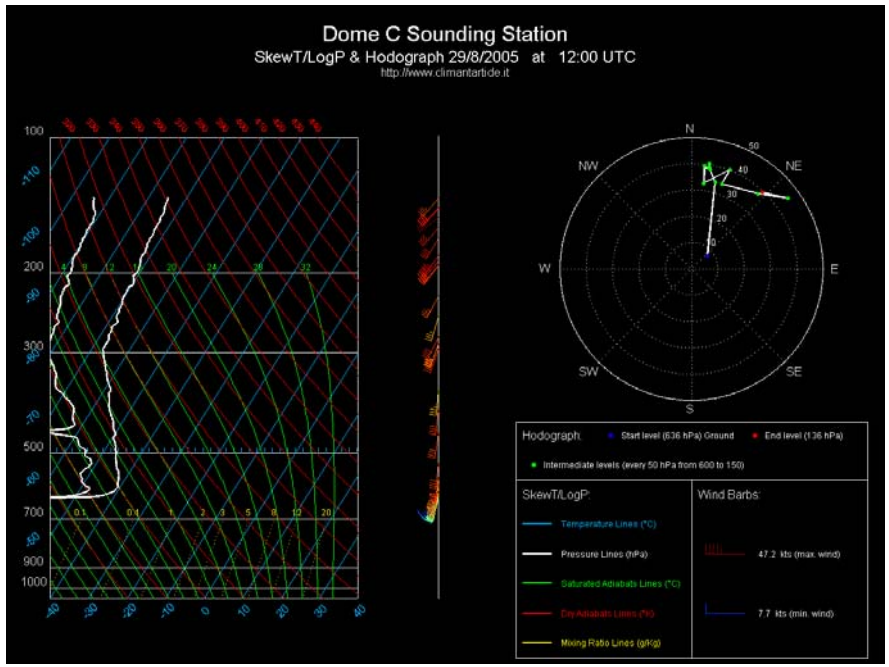
- SkewT & Hodograph
- T,RH,Wind (vertical plot)
- Contour ± 2 days & vertical plot of:

  RH, T, Dew Point, Mixing Ratio, W. Speed, W. Direction; Wind Components.

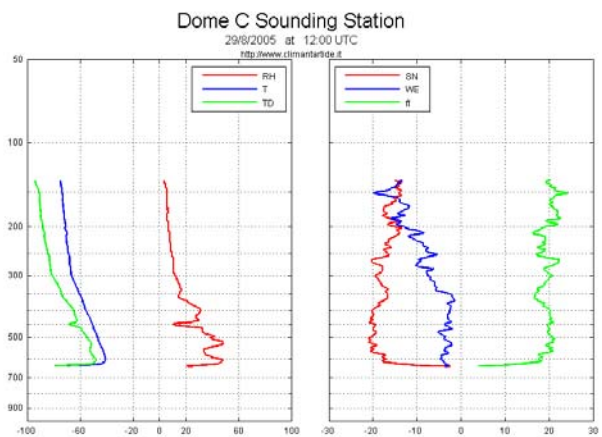
Charts examples

Mixing Ratio



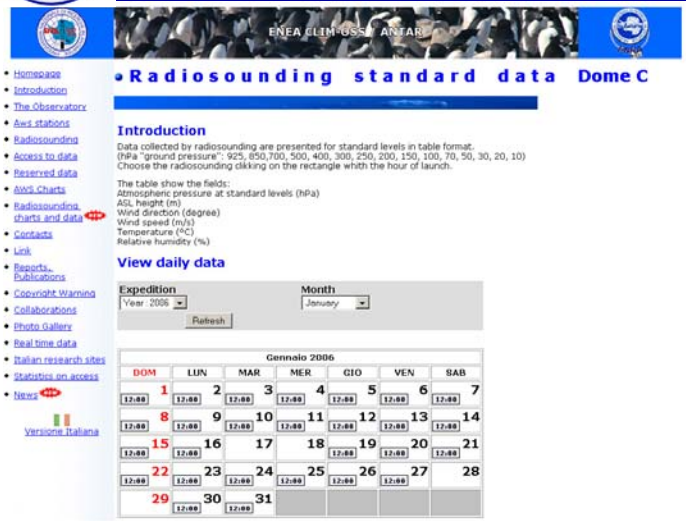


SkewT and Hodograph



T, RH, TD, Wind speed and Components

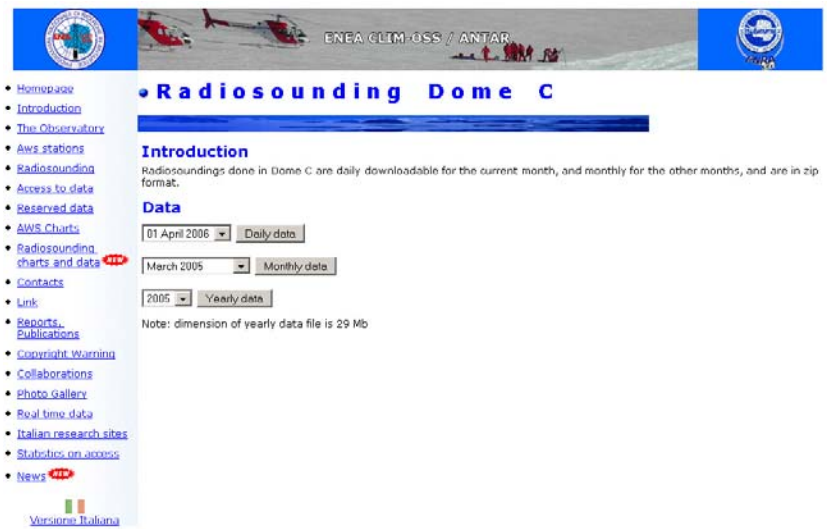
View and Dowloand Data



View Data

Radiosounding of 2006-01-30 at 12

Atmospheric pressure at *standard levels* (hPa)	ASL height (m)	Wind direction (degree)	Wind speed (m/s)	Temperature (°C)	Relative humidity (%)
500.0	5058	190	3.00	-35.00	30
400.0	6573	187	6.00	-44.00	57
300.0	8458	180	13.00	-55.00	49
250.0	9621	194	4.00	-50.00	3
200.0	11100	203	4.00	-46.00	1
150.0	13001	288	1.00	-42.00	1
100.0	15727	275	2.00	-42.00	1
70.0	18117	199	3.00	-39.00	1
50.0	20472	318	1.00	-39.00	1
30.0	23798	111	3.00	-38.00	1
20.0	-999	-999	-999	-999	-999
10.0	-999	-999	-999	-999	-999



Download Data

Aws data

- Homepage
- Introduction
- The Observatory
- Aws stations
- Radiosounding
- Access to data
- Reserved data
- AWS Charts
- Radiosounding charts and data NEW
- Contacts
- Link
- Reports, Publications
- Copyright Warning
- Collaborations
- Photo Gallery
- Real time data
- Italian research sites
- Statistics on access
- News NEW

Versione Italiana

AWS data

Introduction

Automatic weather station data can be view by year. Choose "Automatic Weather Stanions" and "Year" and click on the interesting variables. Then click on "View data" and obtain a data table that can be saved in .zip format. Data are three-hourly till 1991, and hourly from 1992. Next table presents file's format, and, for each misured variable, unit and the value indicating missing data:

Variables	Units	Value for missing datum
Wind direction	degree	-10
Wind speed	kts	-10
Temperature	°C	99.9
Relative humidity	%	-10
Atmospheric pressure	hPa	-10

Data

Automatic Weather Stations	Year Start	Year End
Concordia (////) Dome C	2005	2005

- dir : Wind direction
- vel : Wind speed
- tist : Temperature
- rh : Relative humidity
- pres : Atmosferic pressure
- rmed : Solar radiation

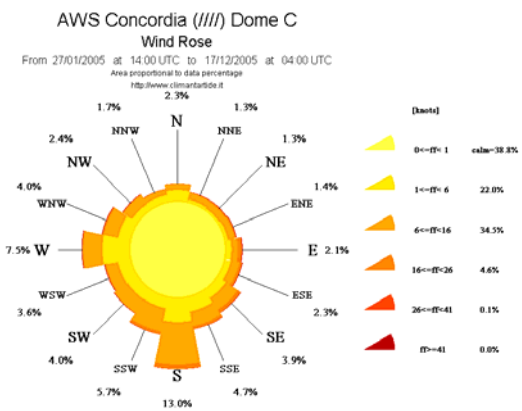
Download

Storing Data

- Access database
- Mysql database

View Data

- Charts in real time
- View AWS data



Year	Month	Day	Hour	dir	vel	tist	rh	pres
2005	1	27	14	260	4	-39,7	17,0	648,3
2005	1	27	15	260	5	-41,6	17,0	648,2
2005	1	27	16	250	6	-42,0	16,0	648,0
2005	1	27	17	260	6	-44,0	16,0	648,0
2005	1	27	18	260	5	-44,5	16,0	648,1
2005	1	27	19	260	4	-44,9	16,0	648,2
2005	1	27	20	260	4	-44,5	16,0	648,2
2005	1	27	21	270	5	-43,3	16,0	648,2
2005	1	27	22	270	4	-41,5	16,0	648,4
2005	1	27	23	260	5	-39,1	17,0	648,6
2005	1	28	0	-10	-10	99,9	-10,0	-10,0
2005	1	28	1	-10	-10	99,9	-10,0	-10,0
2005	1	28	2	-10	-10	99,9	-10,0	-10,0
2005	1	28	3	-10	-10	99,9	-10,0	-10,0
2005	1	28	4	-10	-10	99,9	-10,0	-10,0
2005	1	28	5	-10	-10	99,9	-10,0	-10,0
2005	1	28	6	-10	-10	99,9	-10,0	-10,0
2005	1	28	7	-10	-10	99,9	-10,0	-10,0
2005	1	28	8	-10	-10	99,9	-10,0	-10,0
2005	1	28	9	-10	-10	99,9	-10,0	-10,0
2005	1	28	10	-10	-10	99,9	-10,0	-10,0
2005	1	28	11	280	5	-34,2	24,0	650,7
2005	1	28	12	270	5	-36,3	22,0	650,8
2005	1	28	13	260	5	-38,3	23,0	650,8
2005	1	28	14	250	5	-40,0	17,0	650,9
2005	1	28	15	260	6	-41,3	17,0	651,0
2005	1	28	16	260	6	-43,1	17,0	651,0
2005	1	28	17	250	5	-43,8	16,0	651,2
2005	1	28	18	260	5	-44,8	16,0	651,1
2005	1	28	19	240	5	-44,8	16,0	651,3
2005	1	28	20	260	5	-44,9	16,0	651,3
2005	1	28	21	250	3	-43,3	16,0	651,2
2005	1	28	22	270	2	-42,4	16,0	651,0
2005	1	28	23	270	3	-40,0	17,0	651,2
2005	1	29	0	-10	-10	99,9	-10,0	-10,0
2005	1	29	1	-10	-10	99,9	-10,0	-10,0
2005	1	29	2	-10	-10	99,9	-10,0	-10,0
2005	1	29	3	-10	-10	99,9	-10,0	-10,0

Concordia RMO

4. Is it possible to realize an atmospheric observatory for these measurements ?

5. Who should be in charge for these measurements ?

6. Who should be in charge of creating a rational database ?

7. Which should be is the dissemination strategy ?

Thank you