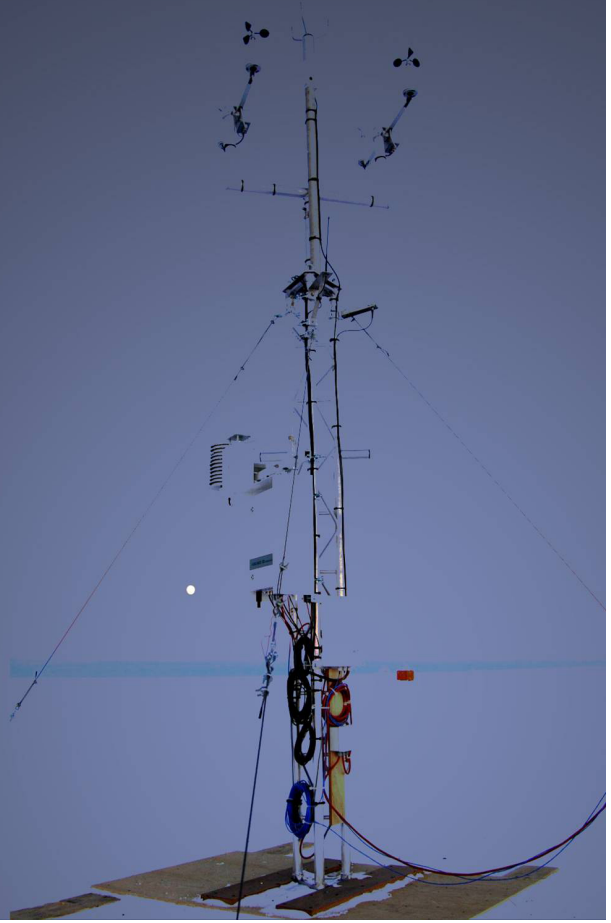
Environmental and Atmospheric Data Distribution

Concordia/Dome C



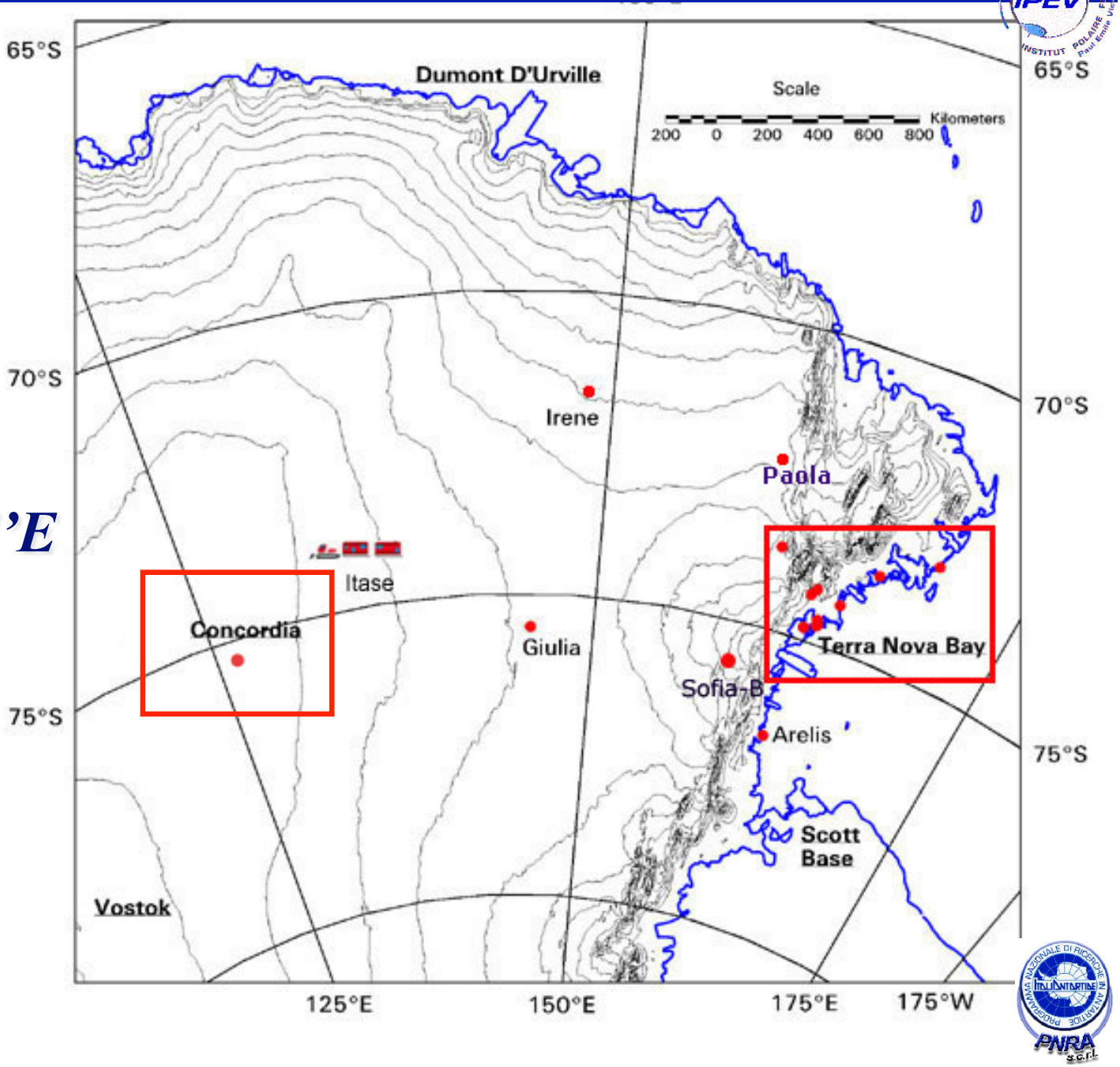
L. Agnoletto, A. Pellegrini and M.Busetto
PNRA S.C.r.l. Casaccia Research Centre, Rome, Italy

Dome C Site

Lat. 75°06'S

Long. 123°24'E

3300 m m.s.l

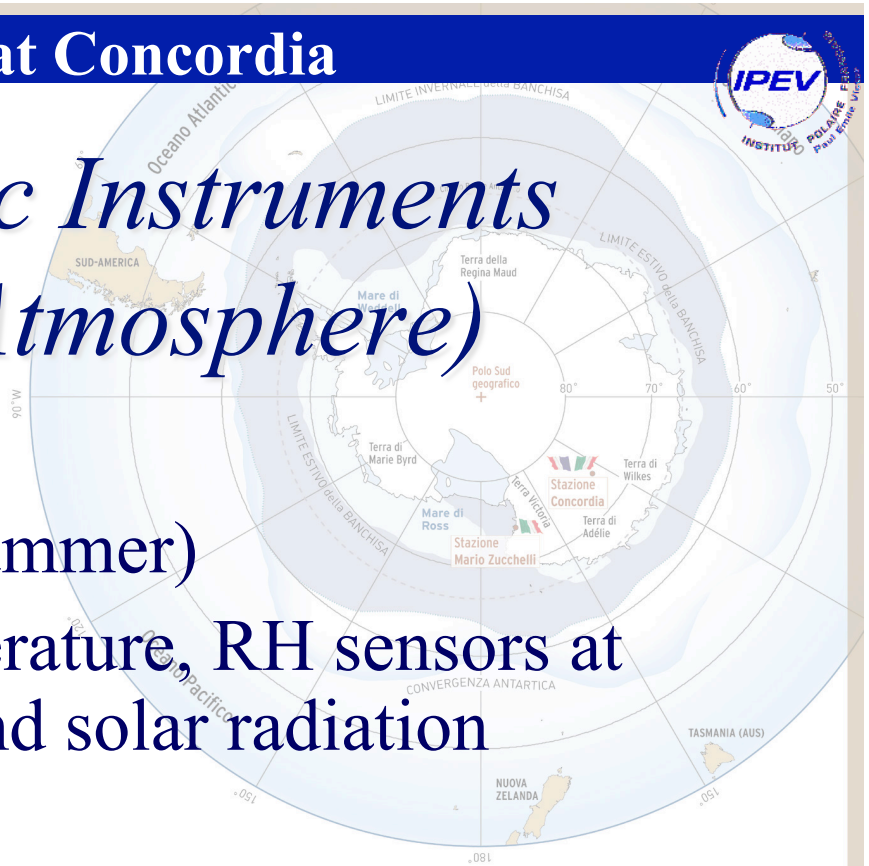


Dome C Site

Dome C
Concordia St. (permanent)

Baia Terra Nova
Mario Zucchelli St. (summer)

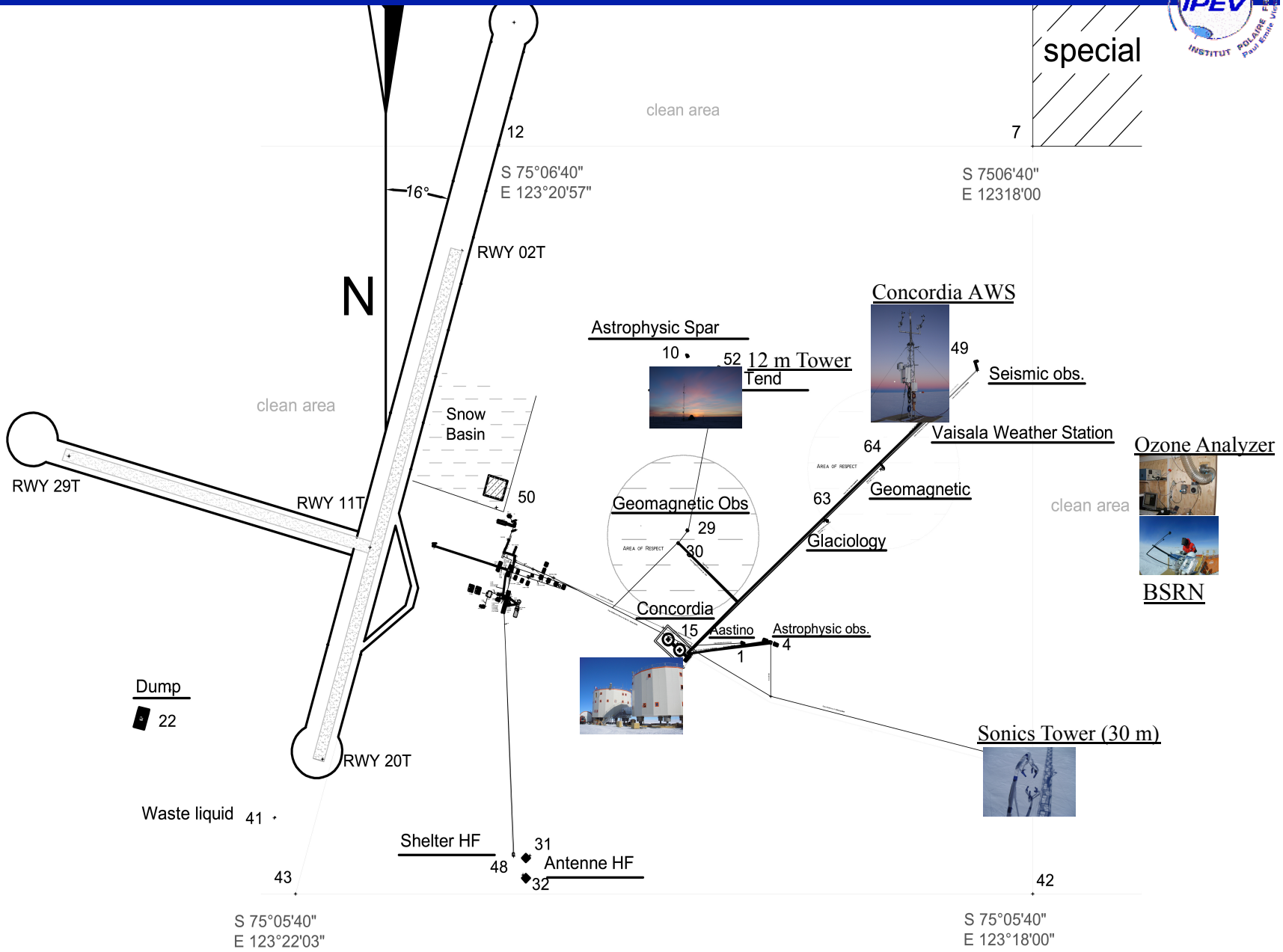
Existing Scientific Instruments (Physic of the Atmosphere)



- AWS Concordia
- AWS Davis and AW11 (summer)
- 12 m Tower: Wind, Temperature, RH sensors at standard levels, pressure and solar radiation sensors.
- 30 m Tower: 4 sonic anemometers (SONICS).
- Radiosounding Station
- BSRN Station
- Ozone Analyzer

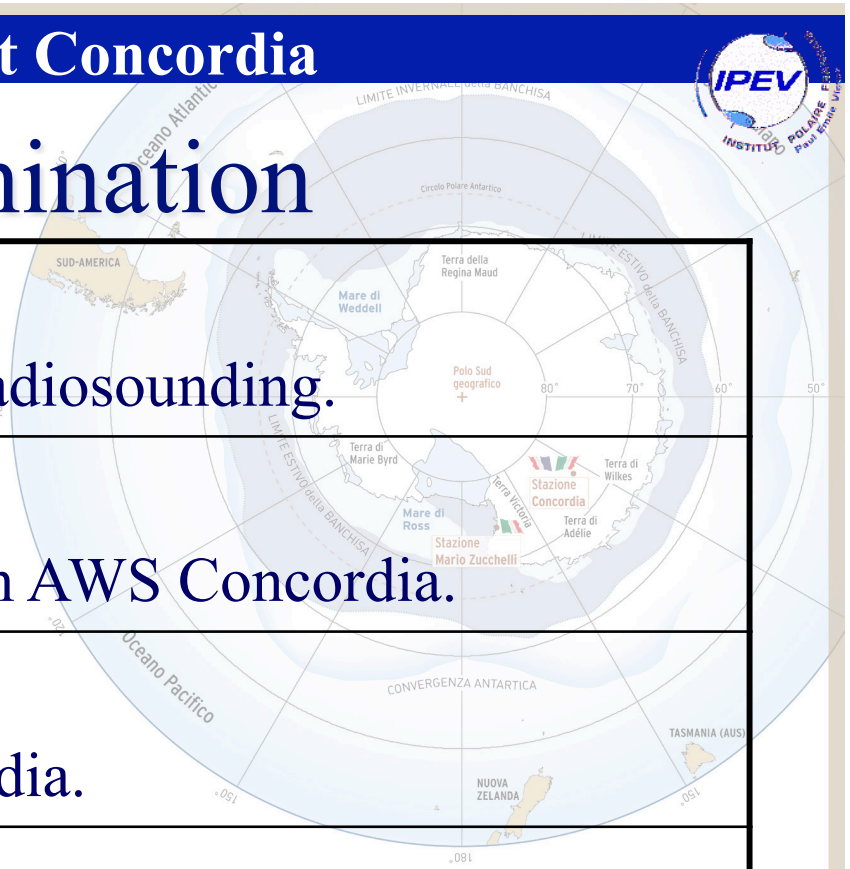
Data Distribution at Concordia

Distribution of the Instrumentation



Data Dissemination

Real Time AWS Concordia, Davis, AW11, Radiosounding.
Daily BSRN station, statistic values from AWS Concordia.
Weekly Statistic values from AWS Concordia.
Monthly Statistic values from AWS Concordia.
After *data are made available to the relevant P.I.'s* Data from specific research projects running nearby the two towers (12 and 30 m).



Data Distribution at Concordia

Real Time

Availability	***Source***	***Frequency***	***Whom ask for data***
Real time	Concordia AWS	*Continuous data, sampled every 1 min and 30 min*	*Physics* of the atmosphere lab.
Real time, at 12:00 UTC	Concordia Sounding System	*Daily*	*Physics* of the atmosphere lab.

Data Distribution at Concordia

Concordia AWS_real time DATASHEET

date, time, temp, RH, press, Wind Speed, Wind Dir

2006/01/16, 00:00, -34.6, 18, 660.6, 3.1, 183
2006/01/16, 00:30, -35.2, 17, 660.5, 3.1, 197
2006/01/16, 01:00, -35.9, 17, 660.5, 3.2, 191
2006/01/16, 01:30, -36.4, 17, 660.4, 2.9, 185
2006/01/16, 02:00, -36.8, 17, 660.4, 2.9, 194
2006/01/16, 02:30, -37.1, 17, 660.4, 2.9, 189
2006/01/16, 03:00, -36.9, 17, 660.4, 3.5, 177
2006/01/16, 03:30, -36.5, 17, 660.5, 3.2, 175
2006/01/16, 04:00, -36.3, 17, 660.5, 3.4, 161
2006/01/16, 04:30, -36.1, 17, 660.5, 3.4, 163
2006/01/16, 05:00, -35.7, 17, 660.5, 3.0, 168
2006/01/16, 05:30, -35.5, 17, 660.5, 2.5, 173
2006/01/16, 06:00, -35.1, 17, 660.6, 2.6, 182
2006/01/16, 06:30, -34.5, 17, 660.6, 2.9, 187
2006/01/16, 07:00, -33.8, 17, 660.6, 2.2, 200
2006/01/16, 07:30, -33.0, 17, 660.6, 2.5, 192
2006/01/16, 08:00, -32.0, 17, 660.5, 3.0, 195
2006/01/16, 08:30, -31.0, 17, 660.5, 3.4, 189
2006/01/16, 09:00, -30.1, 17, 660.4, 4.0, 193
2006/01/16, 09:30, -29.4, 17, 660.4, 3.9, 190
2006/01/16, 10:00, -28.7, 17, 660.4, 4.8, 187
2006/01/16, 10:30, -28.0, 18, 660.3, 4.6, 190
2006/01/16, 11:00, -27.4, 18, 660.2, 4.4, 194
2006/01/16, 11:30, -26.8, 18, 660.1, 4.9, 190
2006/01/16, 12:00, -26.4, 18, 660.0, 4.8, 197
2006/01/16, 12:30, -26.2, 18, 659.9, 5.2, 202
2006/01/16, 13:00, -25.8, 18, 659.8, 5.6, 202
2006/01/16, 13:30, -25.5, 18, 659.8, 5.5, 197
2006/01/16, 14:00, -25.3, 18, 659.8, 5.9, 196
.....

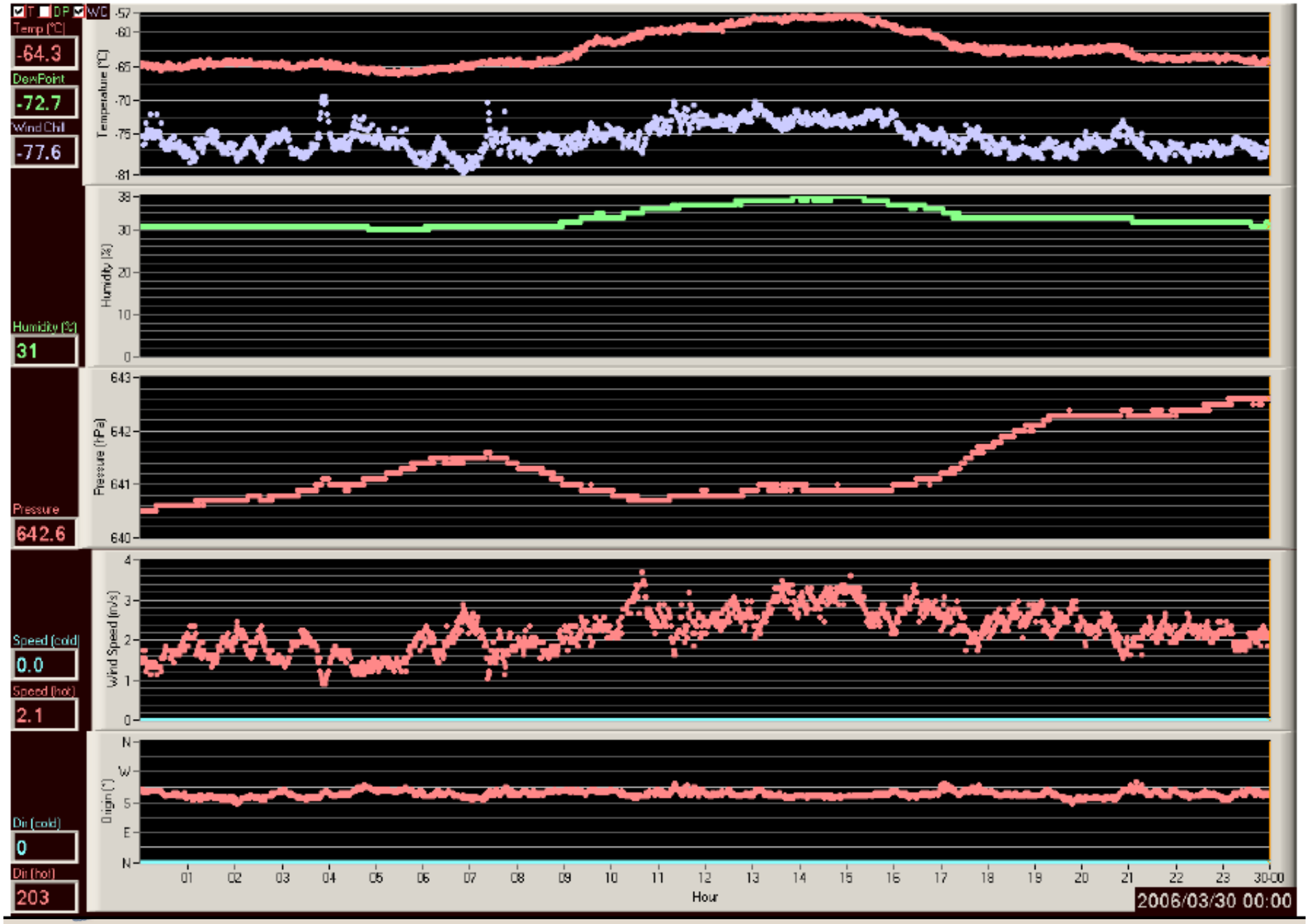
RADIOSOUNDING DATASHEET

EDT LEVEL OUTPUT

Time	Height	P	T	U	WS	WD
0000	3260	642.3	-62.25	56	2.3	197
0002	3265	641.8	-60.45	55	6.4	186
0004	3270	641.3	-47.65	56	7.5	184
0006	3282	640.2	-41.85	57	7.9	184
0008	3295	639	-40.45	58	8.4	184
0010	3304	638.1	-39.65	60	8.7	184
0012	3313	637.2	-39.15	61	9.1	184
0014	3324	636.2	-38.75	61	9.3	183
0016	3336	635.1	-38.35	62	9.4	183
0018	3349	633.9	-38.05	63	9.5	183
0020	3360	632.9	-37.75	63	9.6	183
0022	3370	632	-37.55	63	9.5	183

.....

Concordia AWS_Print Screen of the minitoring software



Data Distribution at Concordia

Daily

Availability	*Source*	**Frequency**	*Whom ask for data*
daily	BSRN station	1 min	*Physics* of the atmosphere lab.
daily	Concordia AWS	Average daily values	*Physics* of the atmosphere lab.

Data Distribution at Concordia

BSRN Output File

#domec	18	1	2006	-750 999 985	-236 619 995	
	#(02)ora	(03)min	(04)az	(05)el	(06)globale	(07)diffusa
	5	0	110.108	16.635	319.0675964	48.4951973
	5	1	109.872	16.695	320.4365845	48.6300621
	5	2	109.637	16.755	321.8111877	48.7378426
	5	3	109.402	16.816	323.2370911	48.8763199
	5	4	109.167	16.876	324.611145	48.9938622

(08)dirCH1_scalata	(09)dirEPP_scalata	(10)longpt100	(11)longtermistore	(12)tpt100	(13)stdglobale	(14)maxglobale
284.7080383	285.0669861	95.6686172	84.5113983	-34.7324104	0.396913	319.7574158
285.9355774	286.2977295	95.7322464	84.4853516	-34.6923752	0.4067832	321.1346436
287.1949158	287.5310364	95.6135101	84.3492889	-34.6866798	0.4048952	322.4793701
288.4639282	288.8127747	95.5519485	84.2929153	-34.6818542	0.4138799	323.8948669
289.7528992	290.1230164	95.542572	84.3342285	-34.679985	0.3932128	325.3124084

(15)minglobale	(16)stddiffusa	(17)maxdiffusa	(18)mindiffusa	(19)stddirettaCH1_sc	(20)maxdirettaCH1_sc	(21)mindirettaCH1_sc
318.4391479	0.0612703	48.6377106	48.379631	0.3601979	285.3665161	284.0686951
319.7799988	0.0609632	48.7469063	48.4888535	0.3663049	286.5198975	285.1622009
321.1346436	0.0744677	48.8930779	48.599144	0.3810444	287.8853455	286.5218506
322.5460205	0.0602325	49.0039673	48.7827644	0.3855194	289.0800781	287.7315369
323.9353027	0.0556373	49.1131516	48.8936272	0.3791062	290.3747253	289.0296021

(22)stddirettaEPP_sc	(23)maxdirettaEPP_sc	(24)mindirettaEPP_sc	(25)stdlongpt100	(26)maxlongpt100	(27)minlongpt100	(28)stdlongtermistor
0.3608583	285.7101135	284.3691406	0.0381144	95.7888794	95.6349106	0.0500345
0.3593954	286.8740234	285.6060486	0.0276836	95.7645874	95.7041626	0.0394012
0.3719934	288.1403503	286.8535156	0.0580578	95.7140732	95.460556	0.0473159
0.3982938	289.4983826	288.1127625	0.0455151	95.653656	95.4936829	0.0477478
0.3957667	290.8260803	289.4297791	0.0597872	95.653656	95.4664841	0.0554786

(29)maxlongtermistor	(30)minlongtermistor	(31)stdtpt100	(32)maxtpt100	(33)mintpt100
84.5820999	84.4128418	0.0069538	-34.7140007	-34.7350006
84.5306396	84.3617554	0.0004858	-34.6920013	-34.6930008
84.4559402	84.2752914	0.0158053	-34.6489983	-34.7130013

Data Distribution at Concordia

Weekly and Monthly

Availability	***Source***	**Frequency**	***Whom ask for data***
Weekly	Concordia AWS	Average weekly values	*Physics* of the atmosphere lab
Monthly	Concordia AWS	Average monthly values	*Physics* of the atmosphere lab
Monthly	Concordia AWS	1 day hourly files of the *past* month	*Physics* of the atmosphere lab
Monthly	Concordia AWS, Radiosoundings	All the data (passing the survey) of the *past* month	***www.climantartide.it***

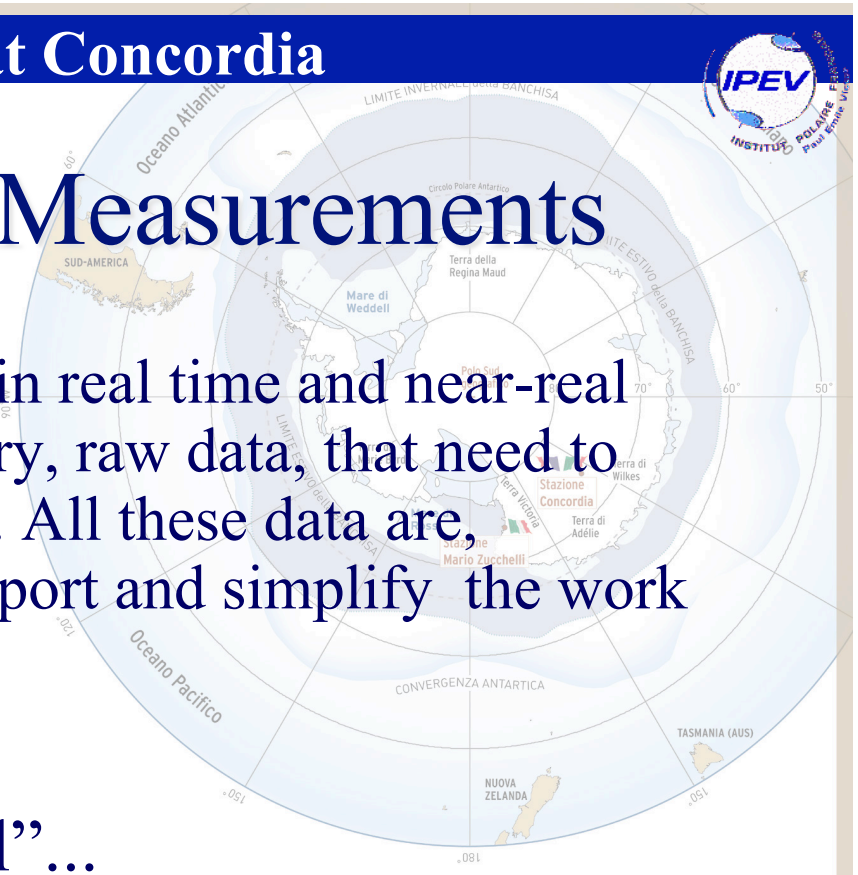
More information and data download:

http://www.climantartide.it

Data from Specific Research Projects

Source	**Frequency**	*Whom ask for data (P.I.'s)*
BSRN	1 min •Optical Thickness •Atmospheric Transmittance •Cloud Cover	Teodoro Georgiadis *t.georgiadis@ibimet.cnr.it*
STABLEDC 2005	10 min •Vertical Profiles till 300 m •Surface Meteorology	Stefania Argentini *stefania.argentini@artov.isac.cnr.it*
SONICS	1 min •Temperature, Wind Speed and their Vertical Gradient till 30 m	Tony Travouillon *tonyt@caltech.edu*
OZONE	1 min, 30 min •Ozone concentrtion	Teodoro Georgiadis *t.georgiadis@ibimet.cnr.it*

Uncertainty of the Measurements



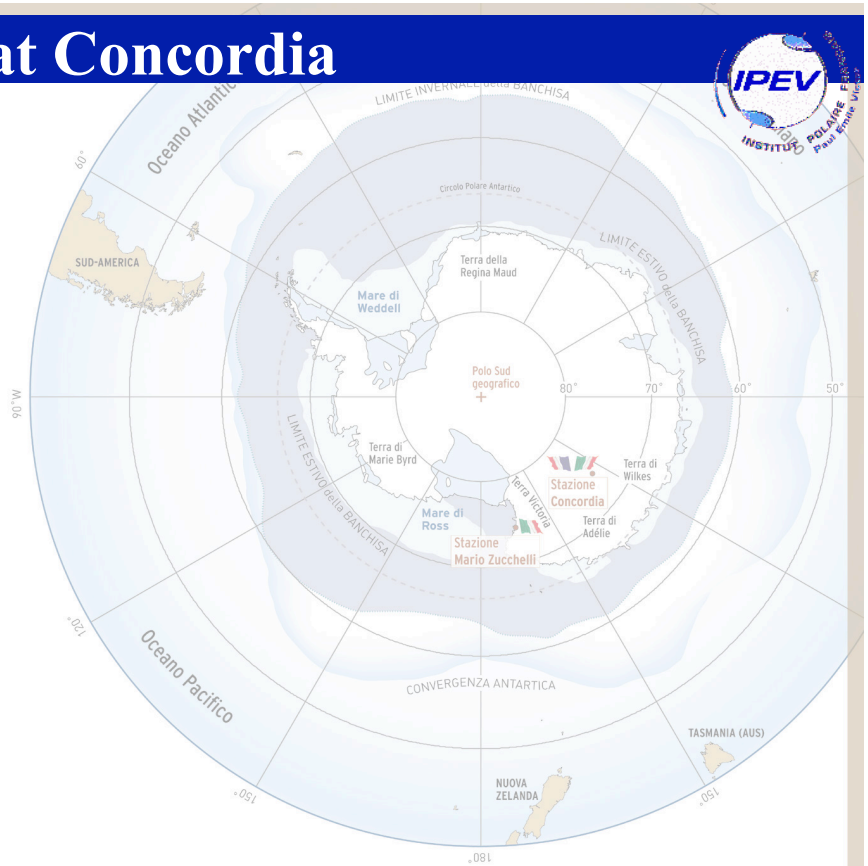
- It' s clear that all data provided in real time and near-real time at Concordia are preliminary, raw data, that need to be validated ... and it takes time. All these data are, anyway, provided on-site to support and simplify the work of the scientific comunity.
- Temperature: ± 0.1 °C
- Relative Humidity: "critical"...
- Pressure: ± 0.3 hPa
- Wind Speed: ± 1 Kts (*warning*)
- Solar Radiation: ± 3 Wm^2 raw-data, the target of the BSRN is the highest of ± 1Wm^2 or 2%.

Proposals for the IPY

- COCOA: Common Concordia Observatory of the Atmosphere.
- The basic idea of COCOA is to concentrate all the routine atmospheric instrumentation on the "NSF" tower at Concordia (possibly extended at 50 m) in order to benefit of common, integrated measurements, and to optimize measurements and resources.
- Radiosoundings will be done twice a day as part of the RMO program.
- Proposals for new installations:
  - A new high resolution mini-sodar.
  - The 13 m tower will be equipped with new sensors: 3 ultrasonic anemometers and 4 temperature-RH probes.
  - 1 radiometer (microwave, to determine the temperature profile).
  - 1 radiometer (in the visible and infrared).
  - 1 lidar to measure the cloud cover.
  - 1 star-fotometer to measures the optical thickness during the winter too (TAVERN).
- Real Time from BSRN station depending on the community's co-operation.

Data Distribution at Concordia

Thank You



Contact:

andrea.pellegrini@consorzio.pnra.it

www.climantartide.it