



Xilinhote - the GRUAN Initial Site

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Location



Xilinhot □ 116°07' E □ 43°57' N, about 500 km north to Beijing



Upper Air Sounding System



L-band and electronic upper-air sounding system

Item

Facts



Sounding Height	25-30km, maximum 35km
Data Sample Interval	1.2s
Range Precision	20m
Angle Precision	0.08 degree
Temperature Range	-90□50□
Temperature Precision	0.2□
Pressure Range	1060□5hPa
Pressure Precision	2hPa (Above 500hPa) 1hPa (Below 500hPa)
Humidity Range	0□100%
Humidity Precision	5%□ Above -25□□ 10%□ Below -25□□
Wind Speed Precision	1m/s (Below 10m/s) ±10% (Above 10m/s)
Wind Direction Precision	5°(Above 25m/s) 10°(Below 25m/s)



New Surface Observations

1. GPS/MET vapor observation

Leica GRX1200 GG Pro(receiver)

Receiver technology: SmartTrack

Satellite reception: Dual frequency

Receiver channels:

14 channels continuous tracking on L1 and L2(GPS)

12 channels continuous tracking on L1 and L2(GLONASS)

Real-time accuracy:

:Static		Kinematic	
Horizontal	Vertical	Horizontal	Vertical
+ 0.5ppm	+ 0.5ppm	+ 1ppm	+ 1ppm

Vapor measurement accuracy: 2mm



New Surface Observations

2. Radiation

High precision radiation observation instruments that can meet BSRN needs are installed including:

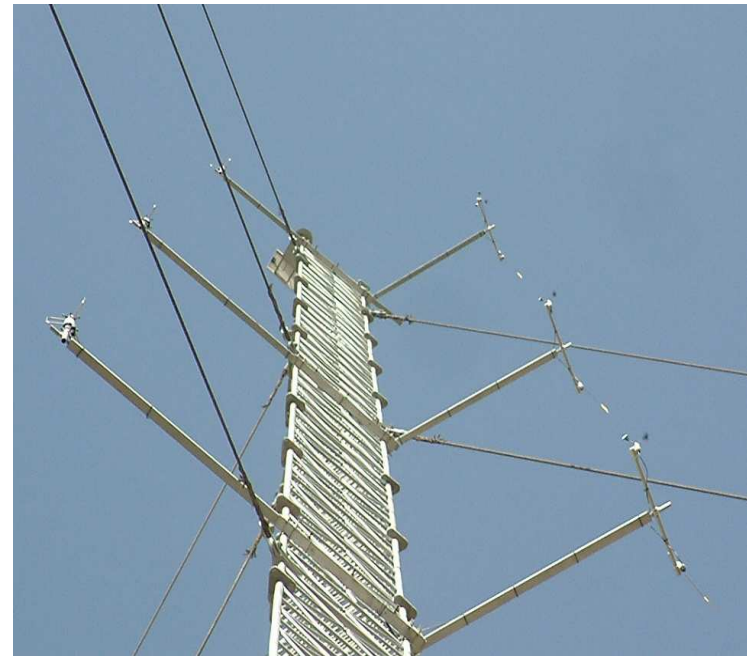
- solar gross radiation,
- reflect radiation,
- diffuse radiation,
- direct radiation,
- net radiation,
- earth longwave radiation,
- photosynthesis effective radiation,
- atmospheric longwave radiation,
- UVA and UVB.



New Surface Observations

3. PBL observation system

- Sensors of *humidity* and *wind speed* were installed at 2m, 4m, 10m, 20m and 30m, *wind direction* sensor at 10m height.
- 3-dimensional ultrasonic wind speed instrument, and conventional wind direction and wind speed sensors were installed at 50m, 70m and 100m height



New Surface Observations



4. Near Surface Flux

- Photosynthesis of effective radiation, net radiation and infrared surface temperature was installed
- 5-level of soil temperature sensors was installed at 5, 10, 15, 20 and 40cm depth
- 5-level of soil humidity sensors was installed at 10, 20, 50, 100 and 180cm depth
- Eddy covariance system



New Surface Observations



4. Atmospheric component observation

- Aerosol (IGRIMM180) ;
- black carbon (AE-31) ;
- Nephelometer (M9003 type)





Data dissemination practice

- All data are transferred to the National Meteorological Information Center, then dispensed to all data user for forecasting, climate and services and scientific research after QC/QA
- Primary data QC are carried out in the station



Suggestions

- Uniformed system used at all the initial stations is necessary?
- Training of the staff of the stations are required.



Thank you!