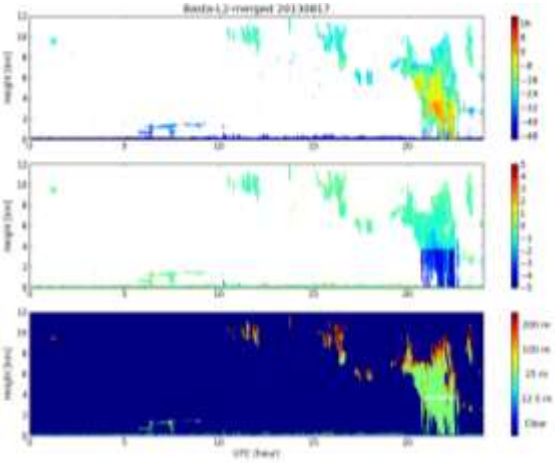
95 GHz CLOUD RADAR

The BASTA is a FMCW (Frequency Modulated Continuous Wave) Doppler radar for cloud and fog studies. This technical option does not require high transmitting power unlike pulsed radar solution. Implementation of FMCW technology is now an efficient and reliable solution thanks to the latest developments in signal processing techniques and allows drastic cost reduction.

New cloud Doppler radar developed by Latmos and manufactured by METEOMODEM

BASTA provides real time 24/7 vertical observations of cloud structure
Measurement of reflectivity and Doppler Velocity



Low power needed with direct impact on cost reduction

Tropospheric profile up to 12 km (20 km in tropics)

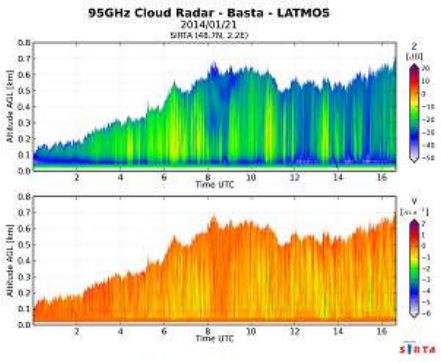
Four simultaneous resolutions:

- 12.5m resolution dedicated to low clouds and fog
- 25m resolution dedicated to midlevel clouds
- 100m and 200m resolutions especially designed for high altitude ice clouds such as cirrus

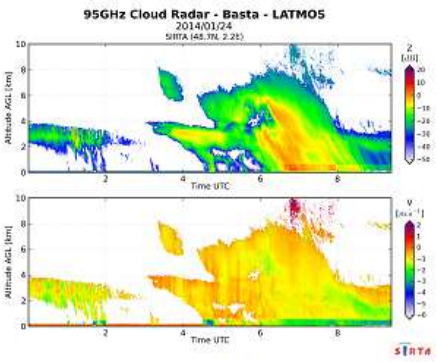
Fog monitoring capability for enhanced security on airports (Nowcasting)

High mobile capability allowing BASTA to be used as a calibration mean for other radars

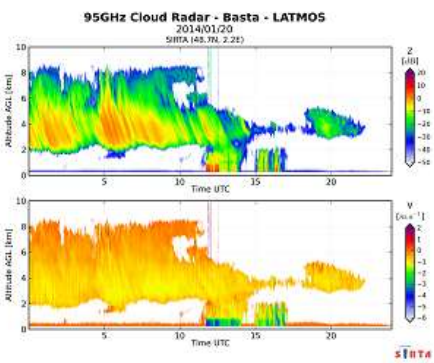
Simplicity and low cost opening a way to cloud radar networking



12,5 m resolution



25 m résolution



100 m resolution

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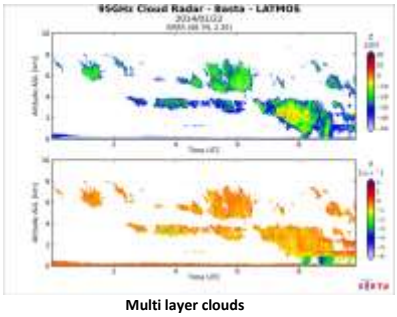
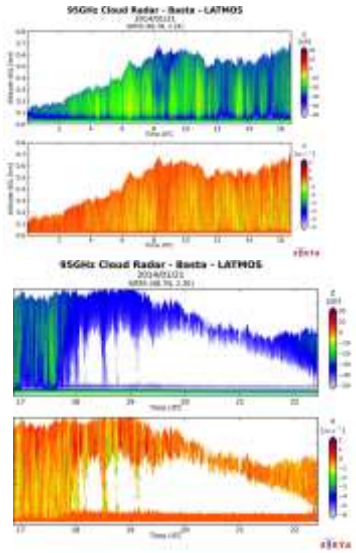
Http //www.meteomodem.com

TECHNICAL SPECIFICATIONS
Cloud Radar BASTA

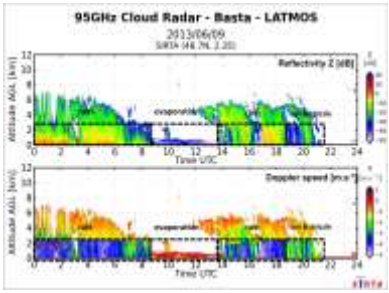
Main features	
Radar type	Bistatic FM-CW, Single polarization Doppler
Operating frequency	95.040 GHz
Range resolution	4 modes (12.5/25/100/200 m alternately)
Unambiguous range	12 km
Unambiguous velocity	± 5 m/s (25/100/200 m) and ± 10 m/s (12.5 m)
Subassemblies features	
Antenna type	2 Cassegrain-field parabolic dishes
Diameter	0.60 m
Gain	54 dBi
Beamwidth	0.4 deg
Scan rate	Vertically-pointing
Transmitter type	Solid state
CW power	0.7 W
Central frequency	95.040 GHz
Bandwidth	1.5 to 24 MHz (depending mode)
Receiver type	Single-conversion
Noise figure	7 dB
IF	90 MHz
IF bandwidth	1.5 to 24 MHz (depending mode)
Dynamic range	84 dB
Data acquisition / processing system	ADC 16 bits/ FPGA
Sampling rate	51.2 MHz
Real-Time display system	Local color monitor
Archive data format	netCDF
Measurements type	Reflectivity and Doppler velocity
Integration time	1 to 20 s
Minimum detection gate	75 m
Observation mode	Continuous, long-term statistical observations
Typical studies	Cloud climatology, cloud microphysics, Satellite sensor ground verification
Dimensions	154*94*74 cm (l * w * h)
Weight	70 Kg



Multi layer clouds
Signal is not attenuated by precipitations



Fog dissipation



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