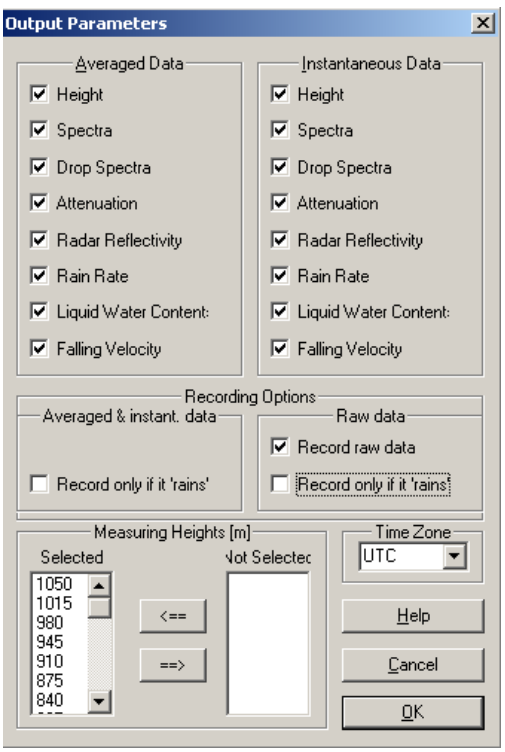
Micro Rain Radar MRR-2

- Vertical profiling of rain rate and liquid water content
- Computes complete drop size distribution
- Height range up to 6000 m with 30 range gates
- Adjustable averaging intervals10 - 3600 s
- Very low maintenance efforts – high system reliability
- High quality measurements free of wind effects, sea spray and surroundings
- Detection of frozen particels
- Melting zome observation



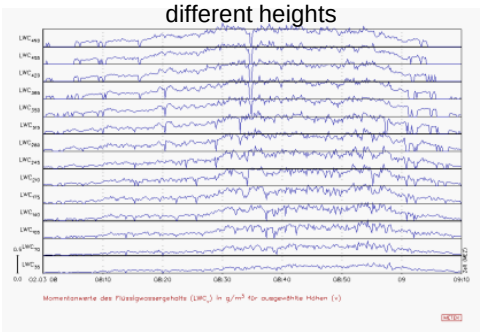
METEK Meteorologische Messtechnik GmbH

Micro Rain Radar MRR-2

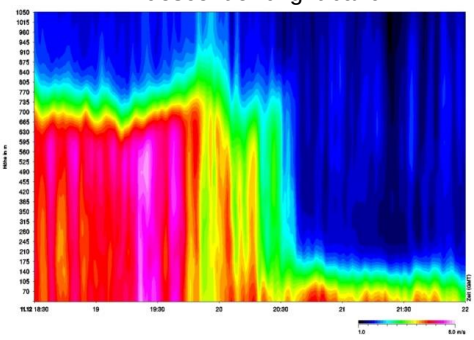
Typical Applications

- Remote measurement of rain rate, reflectivity, falling speed
- Calculation of liquid water content
- Complete doppler spectra available
- Vertical profiles up to 6 km, up to 30 measuring heights
- Verification of weather radar data
- Shortcast of severe precipitation events
- Monitoring of melting zone
- Investigation of thunderstorm clouds
- Long term unattended operation
- Icing protection by antenna heating
- No moving parts, no maintenance

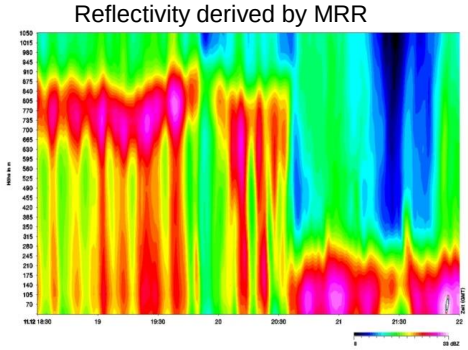
Time series of liquid water content for different heights



Falling velocity of droplets by MRR: descent of bright band



Reflectivity derived by MRR



The Micro Rain Radar MRR-2 represents a new technology for comprehensive investigations of precipitation and cloud dynamics. The system is mounted on the surface and allows precise measurements of the doppler spectra caused by hydrometeors. For the liquid phase the rain rate and the liquid water content can be derived online.

The transition zone between frozen and liquid phase is identified in the profile by a significant local maximum of the radar reflectivity. Mixed phases getting obvious inside detection volume of horizontal scanning weather radars. Further the relation between drop size distribution and reflectivity can be verified as the basic function for precipitation measurement by radar technology.

The MRR can be easily installed in general independently of site conditions. An optional heating for the offset antenna avoids coverage by ice or snow. Adjustment of the system parameters by user via remote access link (LTÈ) is possible. The system requires hardly any maintenance and has been used successfully for routine measurements as well as in scientific set-ups even at adverse sites.

Transmit power / EiRP	50 mW / 500 W
Operation mode	FM CW
Antenna gain	40,1 dBi
Antenna beam, 3 dB half width	1.5 °
Frequency	24,23 GHz
Averaging interval	10 - 3600 s
Height resolution / modulation	10 - 200 m / 0.5 … 15 MHz
Number of range gates	30
Antenna heating	230 / 115 VAC, max. 500 W
Interface	RS232
Antenna diameter	600 mm, max. (offset type)
Weight electronics + antenna	approx. 15.5 kg
Operating voltage	24 VDC
Power supply	230 /115 VAC, 25 W

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TÜV CERT DIN EN ISO 9001

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