



Forschungszentrum Karlsruhe
in der Helmholtz-Gemeinschaft

Institut für Meteorologie
und Klimaforschung

Instruments

of the radar meteorology and cloud physics
working group

Jan Handwerker



- Meteor 360 C “Weather Radar” (C-Band)
- MIRA36-S Scanning Cloud Radar (Ka-Band)



Meteor 360 C



Meteor 360 C

- operational mode
- mounted on the roof of IMK building at FZK
- installed 1993
- (nearly) unchanged scheduler since 1997
- repeats scan schedule every 10 min.
- data operationally archived



Meteor 360 C — Scheduler

1. scan with 14 elevations, 0.5° to 30° ,
120 km range,
500 m radial resolution, 1° azimuthal resolution,
reflectivity, radial (Doppler) velocity
2. single elevation scan (“overview”), elevation 1° ,
200 km range,
500 m radial resolution, 1° azimuthal resolution,
reflectivity
3. same as 1., but no radial velocity

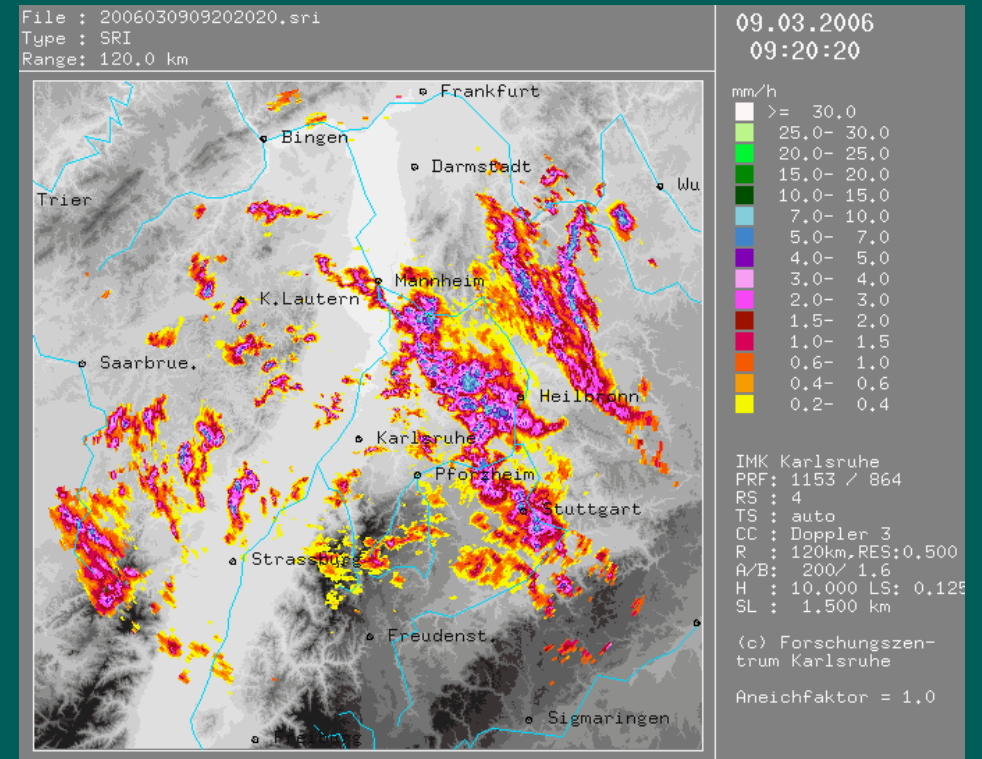
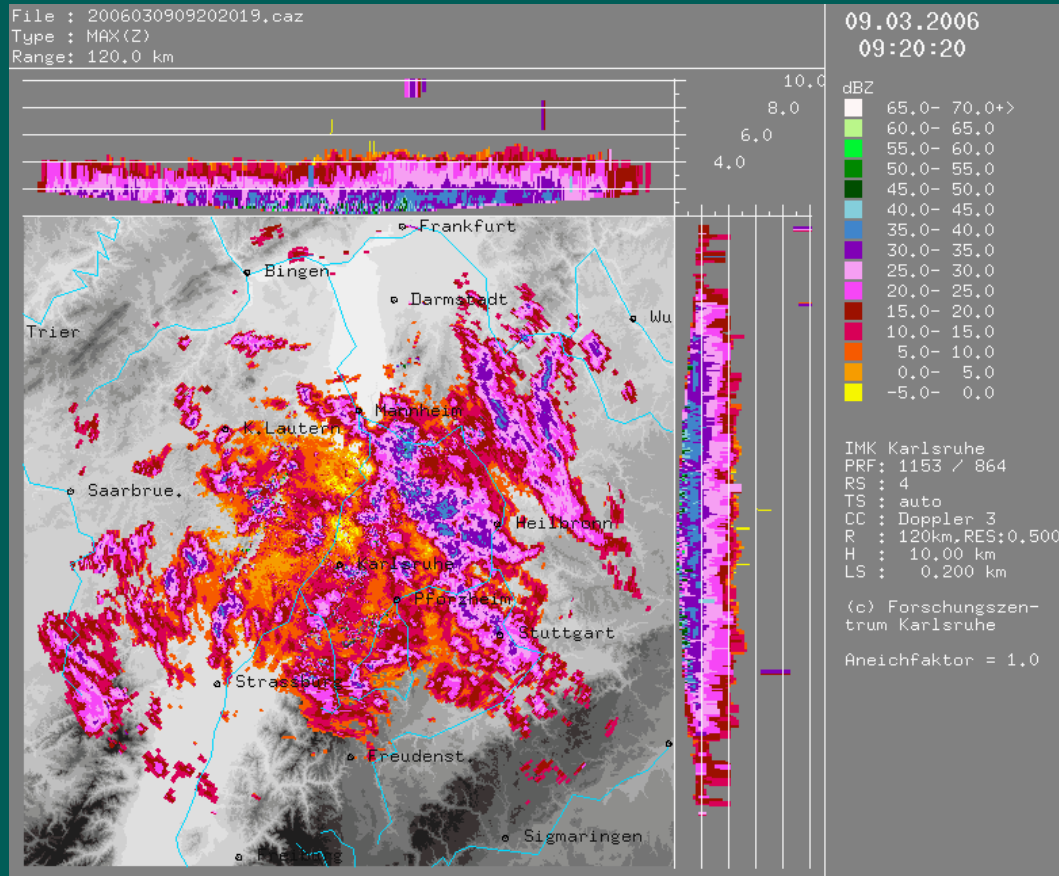


Meteor 360 C — Products

- MaxCaPPI (2.5 dim. projection of maximum reflectivity)
- SRI (Surface Rain Intensity)
- VVP (Volume Velocity Processing, wind profile)
- PPI Z (reflectivity)
- PPI V (velocity)
- VIL (Vertical Integrated Liquid)



Meteor 360 C — Examples



MIRA36-S Scanning Cloud Radar



MIRA36-S Scanning Cloud Radar

- mounted on a trailer
- operational since mid 2005
- 35.5 GHz, 30 kW
- transmits vertical polarized
- receives both linear polarizations
- measures reflectivity (Co/Cross), radial velocity, spectral width, linear depolarization ratio



MIRA36-S Scanning Cloud Radar — Data Sheet

- 35.5 GHz, 30 kW
- 15 m, 30 m or 60 m range resolution
- 500 range gates (up to 15 km range)
- unambiguous velocity 10.5 m/s, 21 m/s or 42 m/s
- polarization isolation -35 dB
- 0° ... 360° azim. range, -45° ... 45° zenith angle
- sensitivity (5 km, 30 m, 0.1 s) better than -44 dB_Z



MIRA36-S Scanning Cloud Radar — Example

