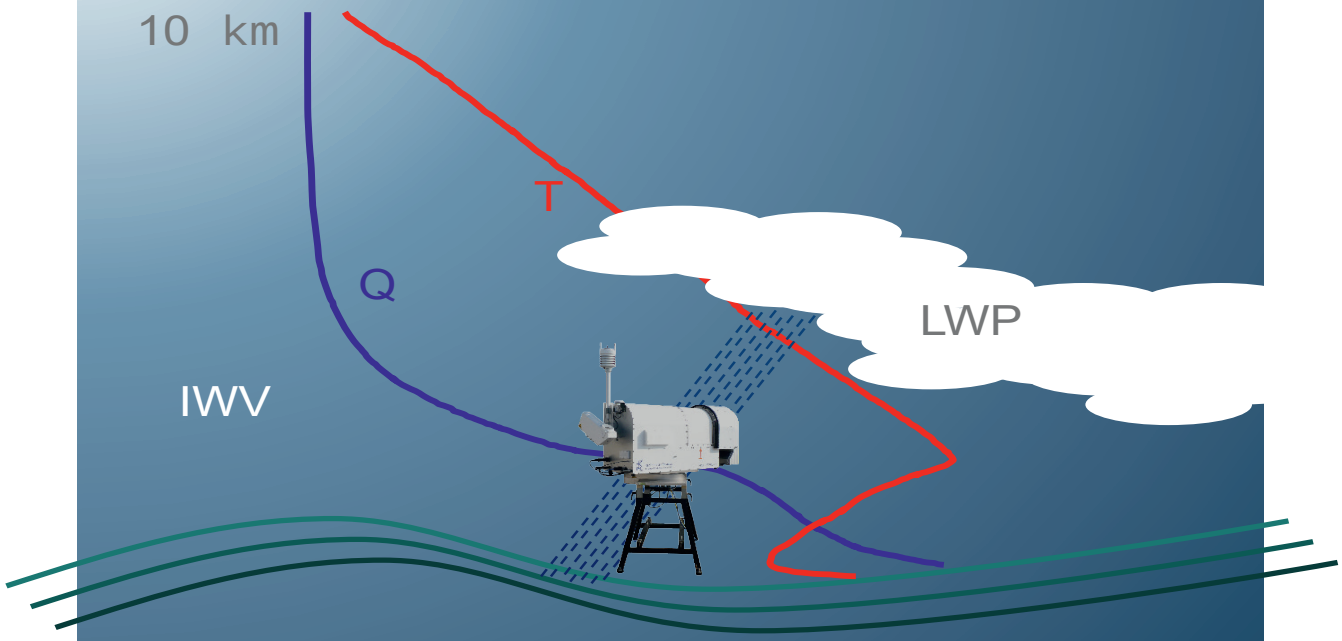




RPG-HATPRO G5 Series

> high-precision microwave radiometers

- > Tropospheric profiling of temperature & humidity
- > Column amounts of water vapor & cloud liquid



GROUND-BASED

Complement the satellite view

MICROWAVE

Works in clouds & moderate rain

RADIOMETERS

Passive / radiosilent operation



14-channel radiometer RPG-HATPRO-G5

> Synchronous data acquisition of all receiver channels:

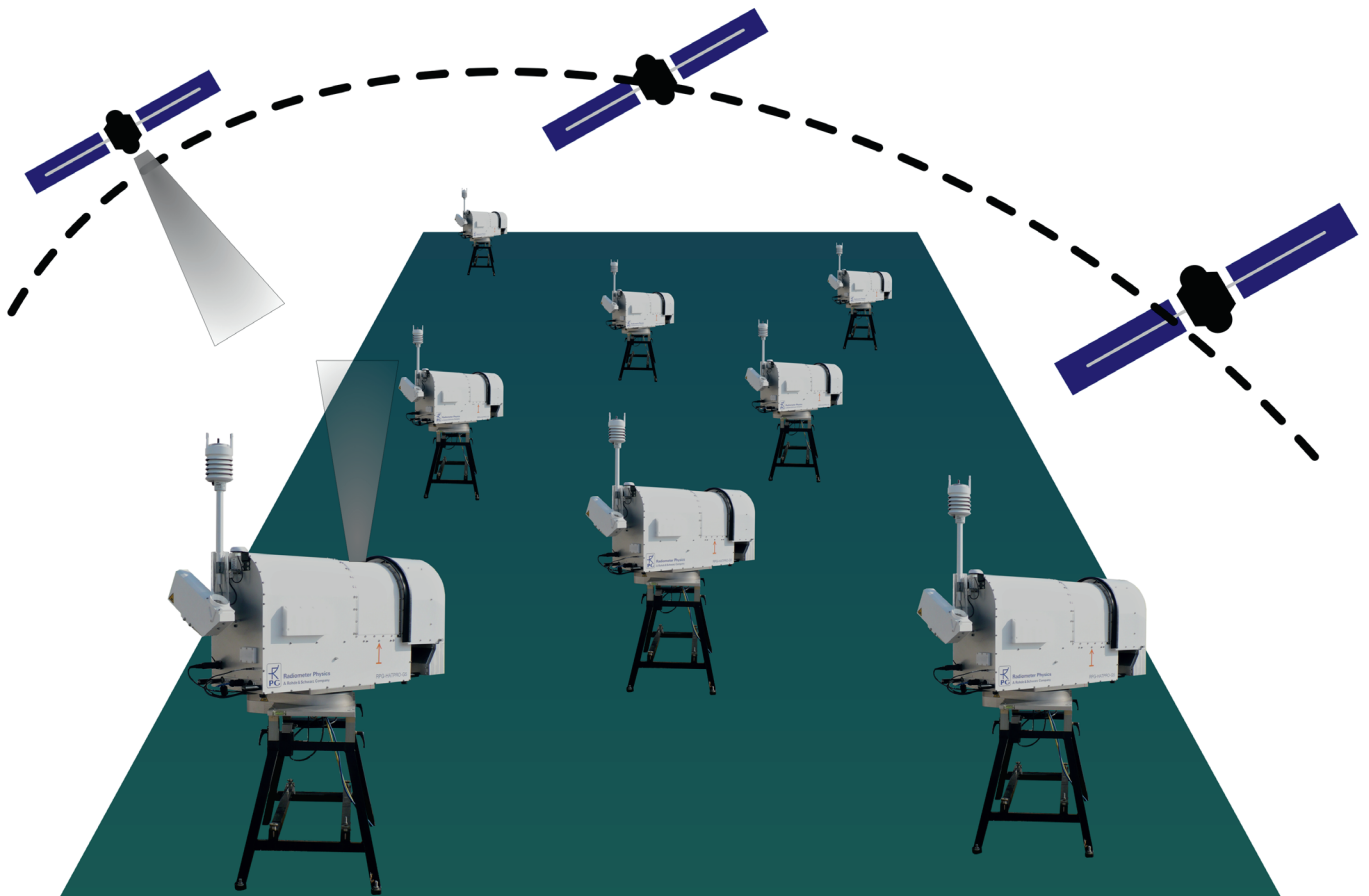
Capture the complete troposphere above the radiometer @ 1s resolution

> Real-time data stream via network interface

Atmospheric data products

> Derived from accurately calibrated brightness temperatures (> page 6)

> Based on state-of-the-art retrieval algorithms optimized for the deployment site



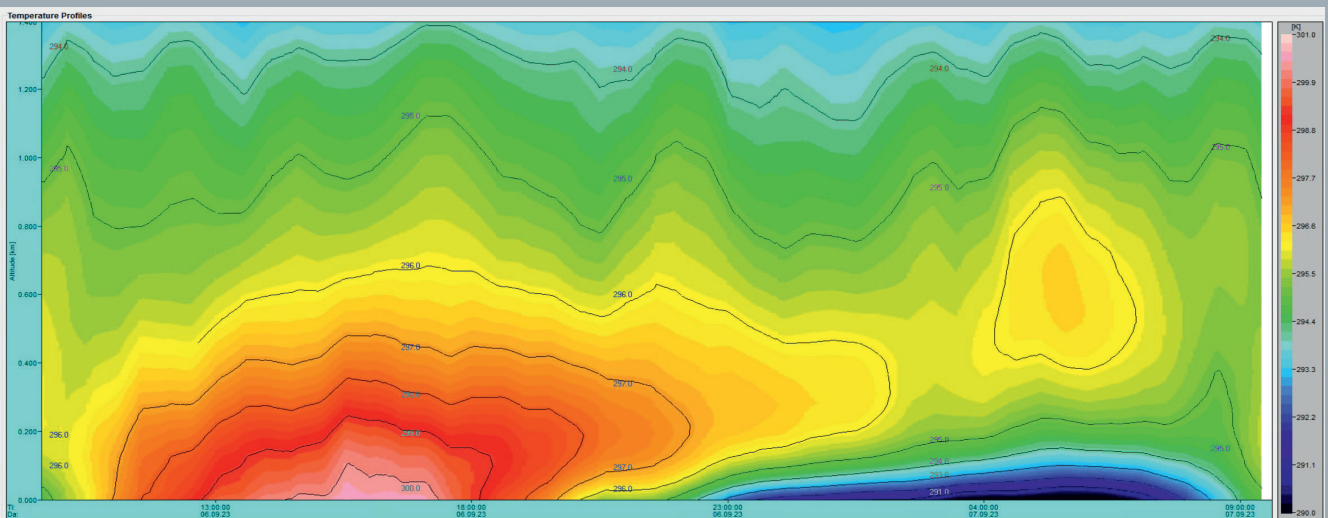
Ground-based radiometer networks for data assimilation into NWP models

- > Designed for **operational use**
- > Since 2003: More than 300 deployments in **all climate zones**
- > Automatic elevation scanning mode:
Enhanced temperature profiling in the **boundary layer**



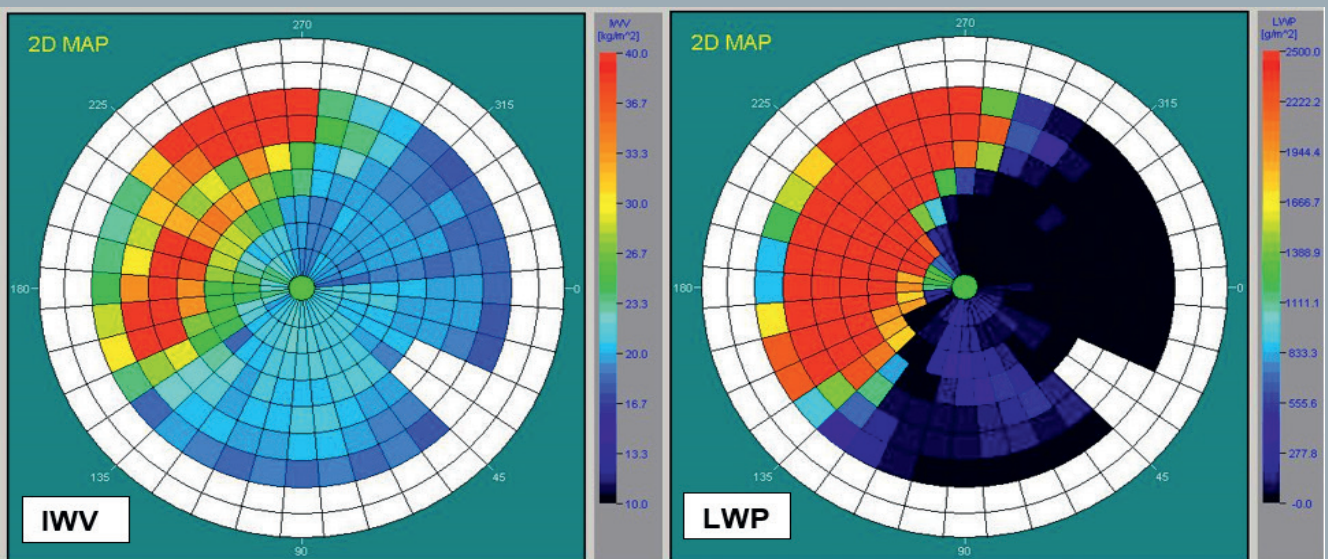
Included: Software package for operation & control

- > User-definable observation strategies
- > Automatic storage into standard data formats
- > Real-time displays of all observations



Evolution of temperature profile in the lowest kilometer

Automatic full-sky scanning with optional turn table



Features of RPG-HATPRO / LHATPRO



Integrated GPS & automatic weather station

Water repellent observation window

IR radiometer for cloud base height

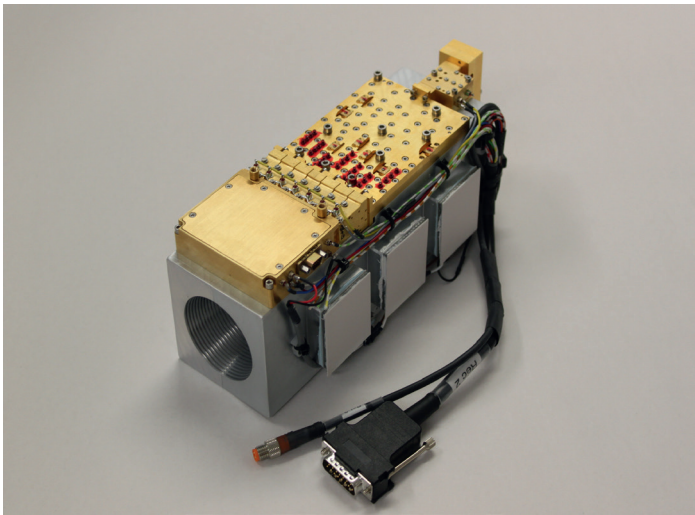
Powerful blower/heater system for mitigation of rain, fog & dew

Net capability via Ethernet interface

Azimuth turn table for full sky scanning & tracking

Solid stand

RPG-HATPRO: Generation 5 makes the difference



**State-of-the-art
microwave receiver technology**

Direct detection
filter-bank design

Immune to
RFI < 18 GHz

Parallel
acquisition

100% duty cycle

High temporal resolution:
all channels in 1 second

Noise-adding receivers

Low noise + high stability

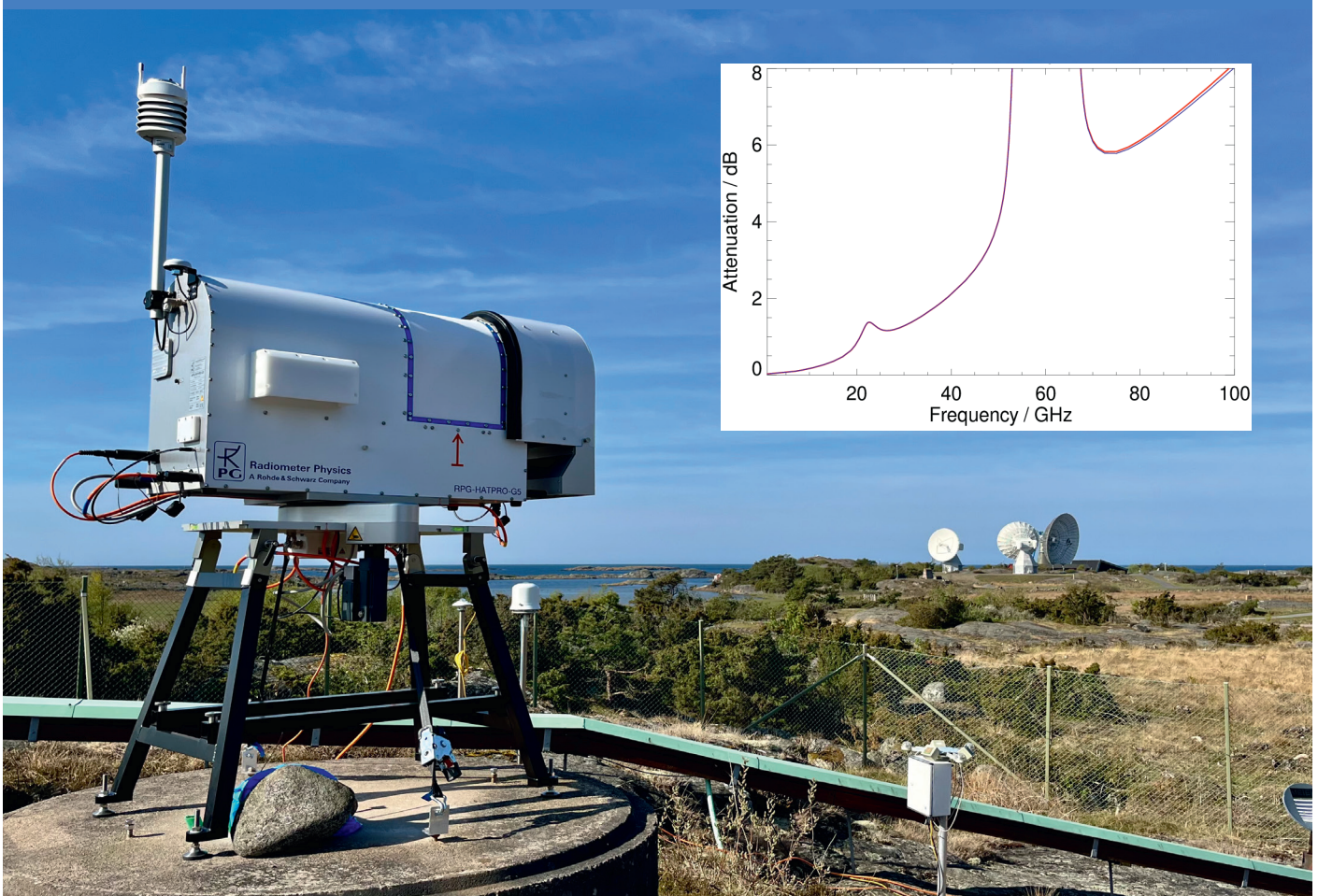
**High-precision absolute
calibration with blackbody targets**



***Accurate radiometric observations boost
the quality of atmospheric products***

Spacecraft / Satellite Tracking with RPG-HATPRO-G5

- > Synchronous line-of-sight observations of **attenuation spectra** (1-100 GHz) and **tropospheric wet delay** @ 1 s resolution
- > Real-time data stream via network interface
- > Accurate full sky scanning ($< 0.1^\circ$ resolution)



Why multi-channel?

- > Attenuation & delay for radio wave propagation derived from the troposphere's thermal emission spectrum
- > 14 selected channels fully characterize this emission spectrum between 1 and 100 GHz



RPG-LHATPRO-G5

> Low-Humidity and Temperature Profiler



- > Designed for arctic conditions and high altitudes
- > 7 K-band channels (standard HATPRO) are replaced by 6 channels along the strong water vapor line at 183 GHz

Detailed technical specifications are available upon request.

Please contact us via:
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