



# *Radiometer Physics GmbH*

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## **RPG Radiometer Deployment Experience**

**The RPG-HATPRO and other RPG radiometer models have been operated under various conditions. The following list contains deployment examples with user e-mail addresses for contacting:**

***Instrumentation:*** RPG-LWP-U72-82

***Application:*** atmospheric attenuation measurements, tele-communication

***Delivery:*** Oct. 2010 (on time)

***Deployment:*** Oct. 2010 until today in Rome / NY

***Contact:*** George Brost, [George.Brost@rl.af.mil](mailto:George.Brost@rl.af.mil)



**Instrumentation: RPG-LHATPRO**

**Application:** atmospheric water vapour measurements (assisting the VLT telescopes)

**Delivery:** Oct. 2011

**Deployment:** Oct. 2011 until today at VLT site, Paranal (Atacama desert), Chile

**Contact :** Florian Kerber, [fkerber@eso.org](mailto:fkerber@eso.org)



**University of Cologne / Germany**

**Instrumentation: RPG-HATPRO-G2 second generation dual profiler** (IR radiometer elevation angle automatically synchronized to microwave observation angle), wind profilers, weather stations,

**Applications:** Precision brightness temperature measurements, validation of atmospheric spectral models, 2D volume MW / IR scanning

**Delivery:** Dec. 2008

**Contact:** [crewell@meteo.uni-koeln.de](mailto:crewell@meteo.uni-koeln.de)





### **Meteo Swiss / Switzerland**

Instrumentation: 1x RPG-HATPRO, 3 x RPG-TEMPRO (single temp. profiler), ceilometer, wind profiler, lidar, radiation sensors, radiosondes

Application: boundary layer temperature profiling in the Mittelland area, convective processes in the lower troposphere

Delivery: March 2006, June 2006, June 2007, June 2007 (all instruments delivered on time)

Deployment period: until now without failures

Contact: [Pierre.Huguenin@meteoswiss.ch](mailto:Pierre.Huguenin@meteoswiss.ch)





## KMA Korean Met. Agency / Korea

9 Stations equipped with radio sounding facilities and wind profilers

Instrumentation: **9 x RPG-HATPRO**, wind profilers, weather stations,

Application: Radiometer data is assimilated into weather forecast model

Delivery: May / August 2009

Contact: [jmshim2@kma.go.kr](mailto:jmshim2@kma.go.kr)



## Laboratoire d'Aerologie, Observatoire Midi-Pyrenees, Toulouse/France

Instrumentation: RPG-LHATPRO, Arctic WV Radiometer

Application: Measurement of ultra low humidity profiles in Antarctica

Delivery: February 2008 (delivered with 6 weeks delay due to development work )

Deployment period: Feb.2008 until now on Pic du Midi / French Pyrenees, no failures

Planned deployment in Antarctica: Jan.2009 until Jan.2020

Contact: [ricp@aero.obs-mip.fr](mailto:ricp@aero.obs-mip.fr)

Phone: +33.5.61.33.27.23

Fax: +33.5.61.33.27.90



Test phase on Pic du Midi (2980 m), French Pyrenees, close to a powerful broadcasting transmitter. The instrument performance turned out to be totally immune to the 100 kW emission from the tower.



**Dôme C, Concordia Station, Antarctica**

**HAMSTRAD**

*RPG-LHATPRO at Dome-C in Antarctica*

## UK MetOffice, Camborne / UK

Instrumentation: 2x RPG-HATPRO, solar radiation sensors, radiosonds, wind profilers

Application: instrument monitors humidity and temperature profiles in coastal and central areas of Great Britain

Delivery: March 2007 (delivered on time)

Deployment period: March 2007 until now, no failures

Contact: [mark.smees@metoffice.gov.uk](mailto:mark.smees@metoffice.gov.uk)

Tel: +44 (0) 1392 885640

Fax: +44 (0) 1392 885681



## ARM Mobile Facility, COPS Campaign / Germany

Instrumentation: RPG-150-90, LWP Radiometer

Application: Accurate measurement of LWP time series

Delivery: June 2007 (delivered with 4 weeks delay)

Deployment period: June 2007 until Dec. 2007, no failures

Contact: [mcadeddu@anl.gov](mailto:mcadeddu@anl.gov)





## ESA/ESTEC, Noordwijk, Netherlands

Instrumentation: RPG-HATPRO + RPG-15-90, fully steerable radiometer combination in Master / Slave operation, wind profiler

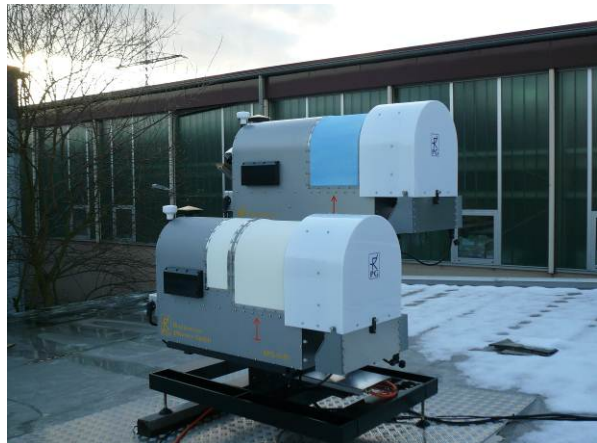
Application: Atmospheric propagation measurements

Delivery: April 2008 (delivered on time)

Contact: [Antonio.Martellucci@esa.int](mailto:Antonio.Martellucci@esa.int)

Tel: +31-71-565-5603

Fax: +31-71-565-4999



## Institut für Meereskunde in Kiel / Germany

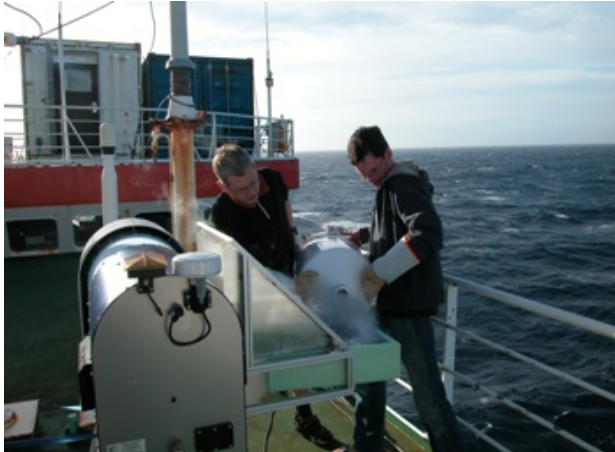
Instrumentation: 1x RPG-HATPRO

Application: instrument monitors humidity and temperature profiles over the ocean ( between Antarktika and Spitzbergen) on board of the German research ice breaker 'Polarstern'

Delivery: August 2006 (delivered on time)

Deployment period: four trips on the Polarstern from Bremerhafen/Germany to Capetown/South-Africa, 5 weeks each, no failures

Contact: [amacke@ifm-geomar.de](mailto:amacke@ifm-geomar.de)



## Meteorological Institute, University of Bonn / Germany

Instrumentation: RPG-HATPRO, cloud radar, lidar, wind profiler

Application: T/H Profiling, LWP, convection in the tropics (AMMA Project)

Delivery: August 2005 (delivered on time)

Deployment period: Jan.2006 to Dec.2006 in West Africa (AMMA)

Deployment period: Apr.2007 to Dec.2007 in Black Forest/Germany (COPS)

Continuous operation during all campaigns

Contacts: [bpospich@meteo-uni-koeln.de](mailto:bpospich@meteo-uni-koeln.de)

[loehnert@meteo.uni-koeln.de](mailto:loehnert@meteo.uni-koeln.de)



## **KNMI, Weather Service of the Netherlands, Cabauw**

Instrumentation: RPG-HATPRO, ceilometer, 200 m met. tower, cloud radar

Application: Weather modelling and prediction, climatology, LWP calibration of cloud radar data

Delivery: April 2006 (delivered on time)

Deployment period: Apr.2006 up to now at KNMI in Cabauw

Continuous operation, one interface failure due to lightning discharge, replacement of wire data cable by fiber optics data cable and exchange of data interface

Contact: [Henk.Klein.Baltink@knmi.nl](mailto:Henk.Klein.Baltink@knmi.nl)



## **Lampedusa / Italy**

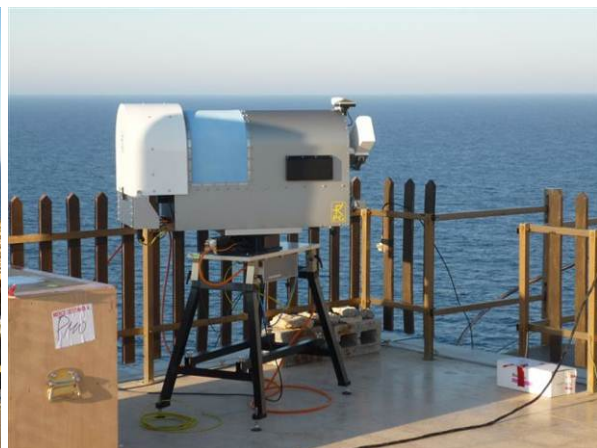
Stazione di Osservazioni Climatiche ENEA di Lampedusa

Instrumentation: RPG-HATPRO, solar radiation sensors, weather stations, GPS, aerosol

Application: Climate modelling of the Mediterranean Sea

Delivery: May 2009

Contact: [giandomenico.pace@enea.it](mailto:giandomenico.pace@enea.it)



## **University of Munich / Germ.**

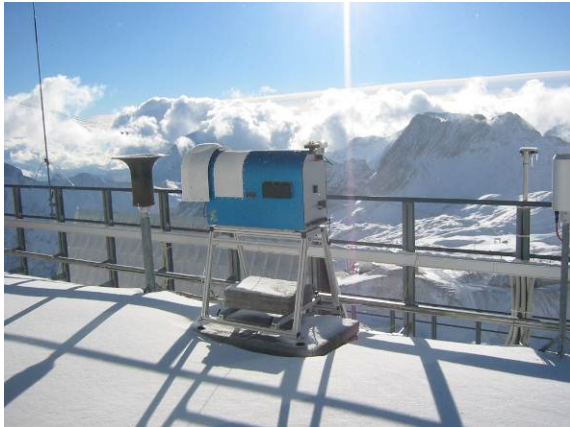
Instrumentation: RPG-HATPRO, RPG-DP150-90 (dual pol. 150 GHz + 90 GHz channel), ceilometer, wind profiler, lidar, radiation sensors

Application: High altitude atmospheric modelling, boundary layer temperature profiling in alpine locations (Zugspitze area)

Delivery: November 2005 (delivered with 1 month delay)

Deployment period: Nov.2005 to March 2008 at Schneeferner Haus / Zugspitze Germany (continuous operation), partly damaged by avalanche in March 2008

Contact: [crewel@meteo.uni-koeln.de](mailto:crewel@meteo.uni-koeln.de)



## University of Wisconsin. Madison / USA

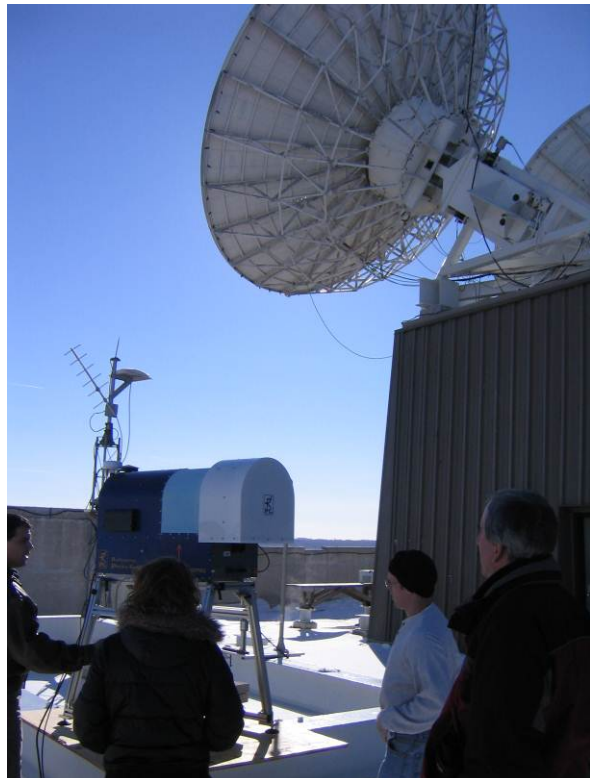
Instrumentation: 1x RPG-HATPRO, 1x RPG150-90, IR lidar, radiosonds

Application: instrument will monitor humidity and temperature profiles and LWP time series at University of Wisconsin/ Madison and shall participate in campaigns of the ARM program, e.g. in Oklahoma (SGP, Southern Great Planes)

Delivery: Feb./ May 2007 (delivered 2 month ahead of schedule)

Deployment period: Feb.2007 until now, one 50 GHz amplifier failure

Contact: [dturner@ssec.wisc.edu](mailto:dturner@ssec.wisc.edu)



## Hong Kong Observatory, Met Agency / China

Instrumentation: RPG-HATPRO

Application: Assimilation of humidity and temperature profiles into weather forecast models

Delivery: February 2008 (delivered one month ahead schedule)

Contact: [pwchan@hko.gov.hk](mailto:pwchan@hko.gov.hk)



## University of Ireland / Galway, Mace Head Station

Instrumentation: RPG-HATPRO, cloud radar, ceilometer, GPS, aerosol

Application: modelling of cloud formation in combination with aerosols

Delivery: May 2008 (delivery within one month aro)

Contact: [martucci.gianni@libero.it](mailto:martucci.gianni@libero.it) , [harald.berresheim@nuigalway.ie](mailto:harald.berresheim@nuigalway.ie)



## Legionowo / Leba / Wroclaw (Poland)

Polish Meteorological Agency IMGW

Instrumentation: **3 x RPG-HATPRO**, solar radiation sensors, radio sounding stations, wind profilers

Application: Radiometer data is assimilated into weather forecast model

Delivery: Dec. 2008 (manufacturing of 3 instruments in 2 month)

Contact: [Adam.Jaczewski @imgw.pl](mailto:Adam.Jaczewski@imgw.pl)

