ARM Atmospheric Radiation Measurement Program

COPS Overview

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COPS

- Convective and Orographic Precipitation Study
- June - August 2007
- Black Forest Region, Southwestern Germany
- Part of the larger 1-yr long General Observations Period (GOP)
- Principal Investigator: Volker Wulfmeyer and Susanne Crewell
- AMF deployed to Hasselbach, Germany; observations will start 1 April 2007 and end 31 December
- Large international experiment, with significant contributions from US, German, French, English, Austrian, and Italian colleagues.

Science Questions

- What are the processes responsible for the formation and evolution of convective clouds in orographic terrain?
- What are the microphysical properties of orographically induced clouds and how do these depend on dynamics, thermodynamics, and aerosol microphysics?
- How can convective clouds in orographic terrain be represented in atmospheric models based on AMF, COPS, and GOP data?

COPS Working Groups

- Convective Initiation
  - Ulrich Corsmeier, Tammy Weckwerth, and Cyrille Flamant
- Aerosol and Cloud Microphysics
  - Herman Russchenberg, Dave Turner, and Stephen Mobbs
- Precipitation and Its Lifecycle
  - Martin Hagen, Andrea Montani, and Reinhold Steinacker
- Data Assimilation and Predictability
  - George Craig, Stefan Bauer, and Francois Bouttier

COPS Supersites

M

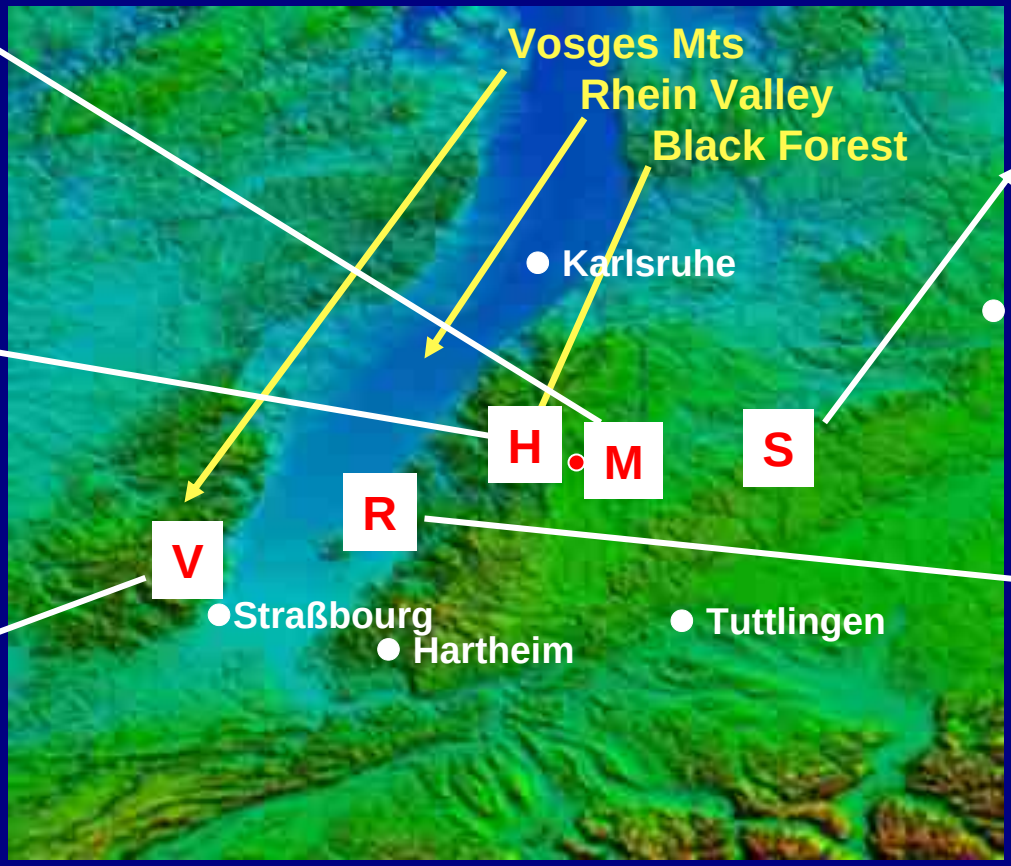
- AMF
- HATPRO
- 90/150 GHz
- MWL
- WILI
- MRR

H

- WV DIAL
- RR Lidar
- WindTracer
- FZK Cloud Radar
- UHOH X-Band
- Radiosondes (FZD)
- UK aerosol in situ

V

- CNRS WV Raman lidar
- CNRS TRESS (aerosol)
- IR radiometer
- LaMP X-Band
- K band rain radar
- MF RaSo, surf. stations
- MF soil moisture (1-3)
- MF UHF prof., sodar



2 mobile sonde stations

S

- WTR
- MRR
- Radiosondes
- Tethersonde
- CNS radiometer
- UK Doppler lidar

R

- UNIBAS Raman lidar
- UK Doppler lidar
- UK radiometer
- UHH cloud radar
- TARA
- Radiosondes (UK)
- UK sodar

- Sodars (entrance of Murg, Kinzig, and Rench valleys)
- 2 more sodars to deploy

- Transect of 7 additional MRRs from E-to-W (Hamburg)
- Arrays of GPS, flux, soil moisture, precipitation, and automated weather stations

BAE-146
DLR Falcon
French Falcon
DO128