

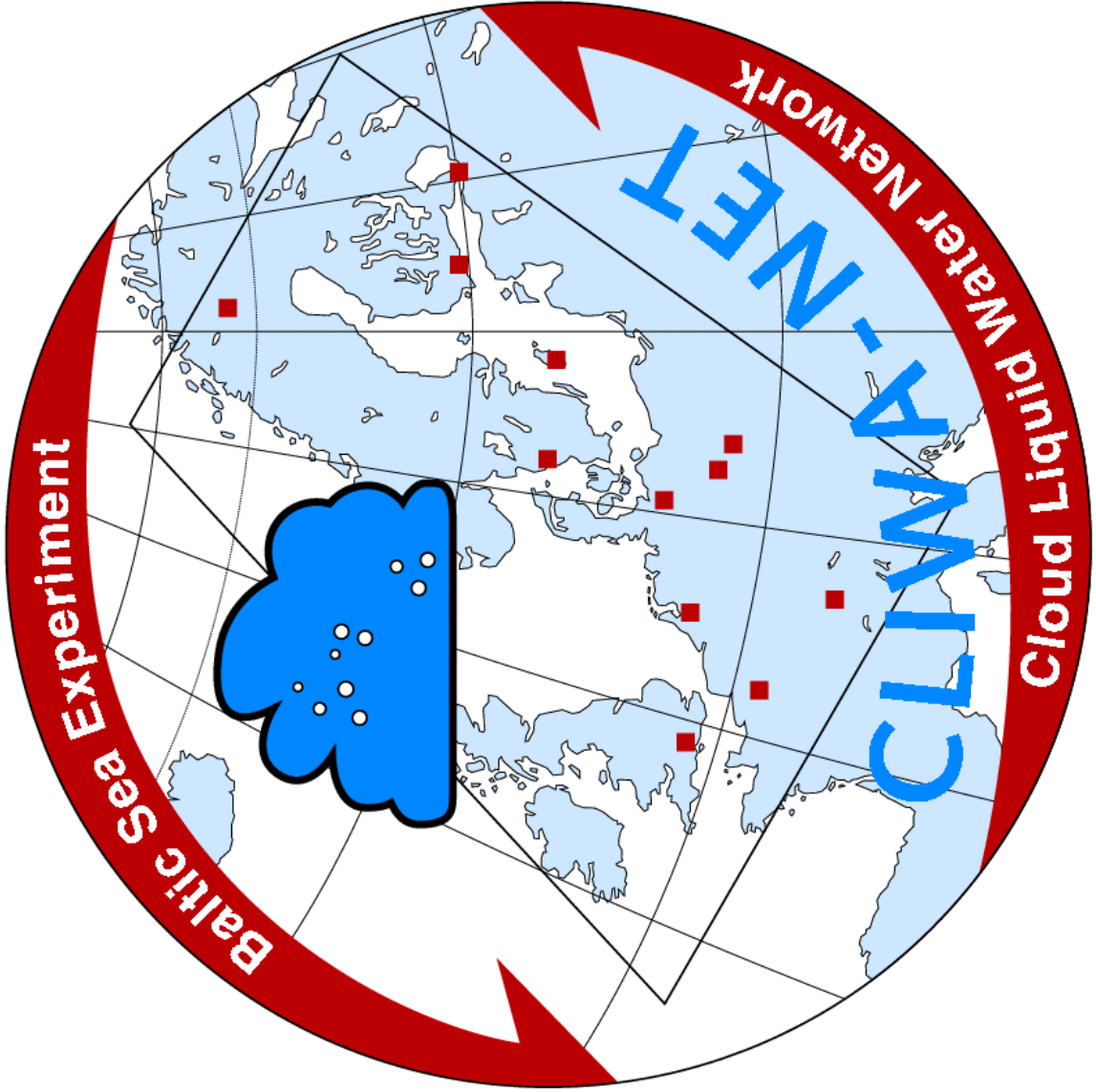
Agenda "BBC Aircraft Planning Meeting"

KNMI, De Bilt, The Netherlands

Buys Ballot Room

January 12, 2001; 10:00 - 16:30

- 1) Opening and Welcome, Andre van Lammeren
- 2) Adoption of the agenda
- 3) Overview CLIWA-NET project and BBC campaign, Andre van Lammeren (15 min)
- 4) Overview 4D-Wolken project, Susanne Crewell (MIUB) (15 min)
- 5) The Merlin IV aircraft, Meteo France, Marie-Pierre Lefebvre (15 min)
- 6) Partenavia P68B, ITF Leipzig, Manfred Wendisch (15 min)
- 7) Cessna, FUB, Marc Schröder (15 min)
- 8) Other short introductions:
 - Fast FSSP, Meteo France, Jean-Louis Brenguier
 - Evaluation of LES models, KNMI, Pier Siebesma
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- 9) Discussion on
 - Objectives for the aircraft measurements
 - Instrumentation of the aircraft
 - Flight plans
 - Co-ordination of the aircraft
 - Co-ordination with Air Traffic Control
 - Logistics
 - Operation of ground-based systems
 - ...
- 10) Wrap-up, action items
- 11) Round the table
- 12) Closing of the meeting (approx. 16:30)





BALTEX BRIDGE Cloud Liquid Water Network:

CLIWA-NET

- EU funded project (5th frame work)
- Modelling, implementation and observations
- March 2000 - March 2003
- 13 partners





2000 12 14



Participants

- Royal Netherlands Meteorological Institute, KNMI
- Meteorological Institute University of Bonn, MIUB
- Swedish Hydrological and Meteorological Institute, SMHI
- Institut für Meereskunde Kiel
- GKSS
- European Centre for Middle range Weather Forecast
- Deutsche Wetter Dienst
- Institute of Applied Physics, University of Bern,
- CETP/UVSQ/IPSL
- Onsala Space Observatory
- Helsinki University of Technology
- Radiometer Physics GmbH
- Russian Academy of Sciences, St. Petersburg





CLIWA-NET Objectives

- Better understanding/description of the role of clouds in the climate system
- High quality, high resolution data set on LWP fields (and vertical structure)
- Objective evaluation and development of state-of-the-art cloud parameterisations (focus on LWP)
- Development of low cost micro wave radiometer





Observations

- Obtain a consistent, validated, high quality, high resolution data set on integrated cloud liquid water fields and vertical structure of cloud water on a continental and regional scale
- Development of observing system for the detection of icing conditions for aircraft (presence of super cooled water)
- Contribute Global Observing System with a focus on cloud observations



Observational Plan

- CLIWA-NET Network: CNN-I and CNN-II
 - LWP and “vertical profiling” network in the BALTEX area
 - Satellite processing environment (Meteosat, NOAA/AVHRR)
- BALTEX BRIDGE Cloud campaign (BBC)

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CLIWA-NET Network
CNN



CNN

- 12 stations in Baltic modelling area
- Aim to equip every station with:
 - Micro wave radiometer
 - Lidar ceilometer
 - IR-radiometer
 -
- Several cloud radars will be operated during the CNN-I and CNN-II to obtain profiling information



More CNN

- Satellite processing environment (Meteosat, NOAA/AVHRR, AMSU, MSG,)
- BALTRAD radar network
- Network will be operated during Aug./Sept. 2000, April/May 2001
- Satellite and microwave radiometer data will be combined to obtain high quality LWP fields

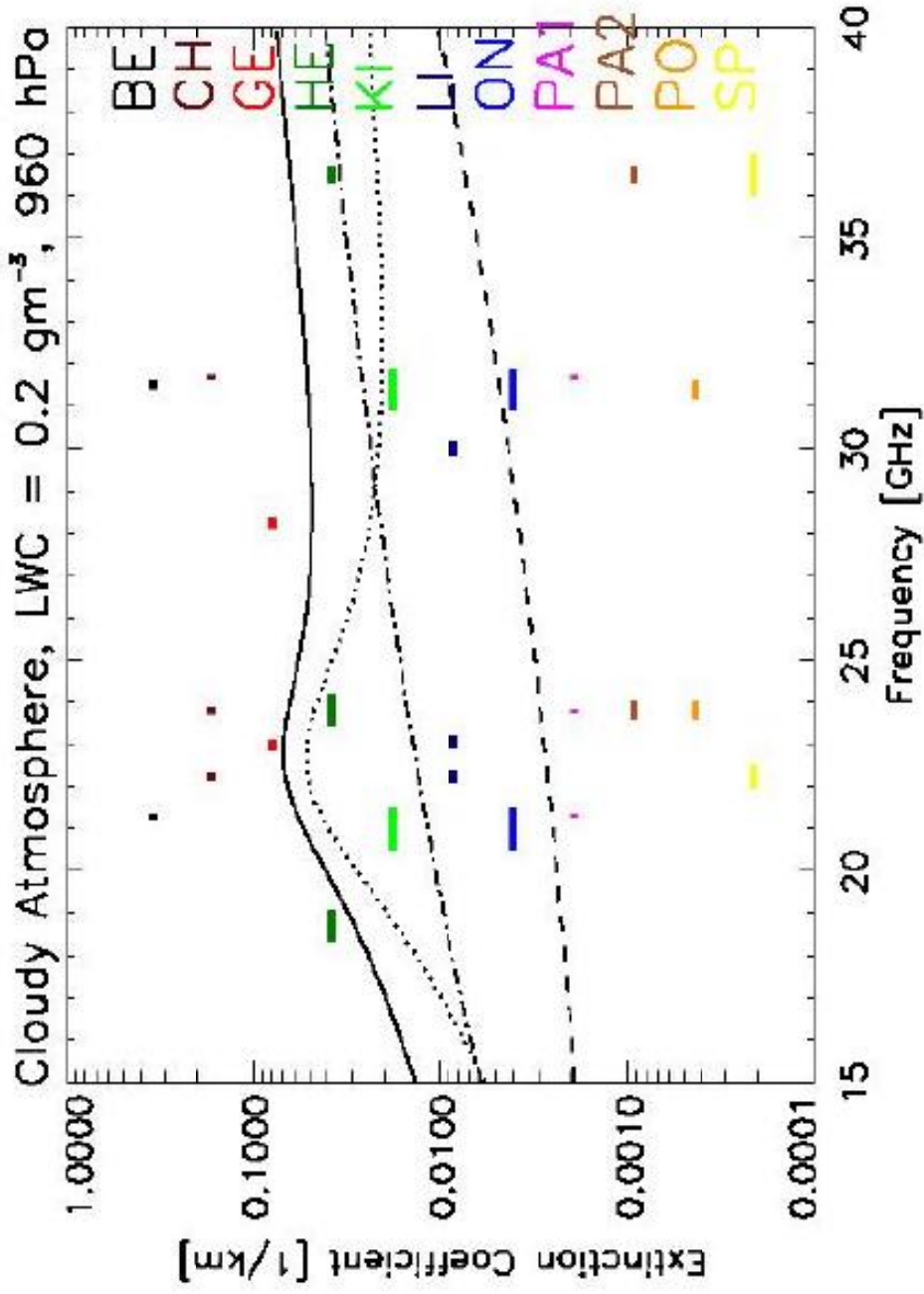


Objective BBC campaign

- Obtain a consistent, validated, high quality, high resolution data set on integrated cloud liquid water fields and vertical structure on a regional scale (typically $100 \times 100 \text{ km}^2$)

Microwave intercomparison Campaign

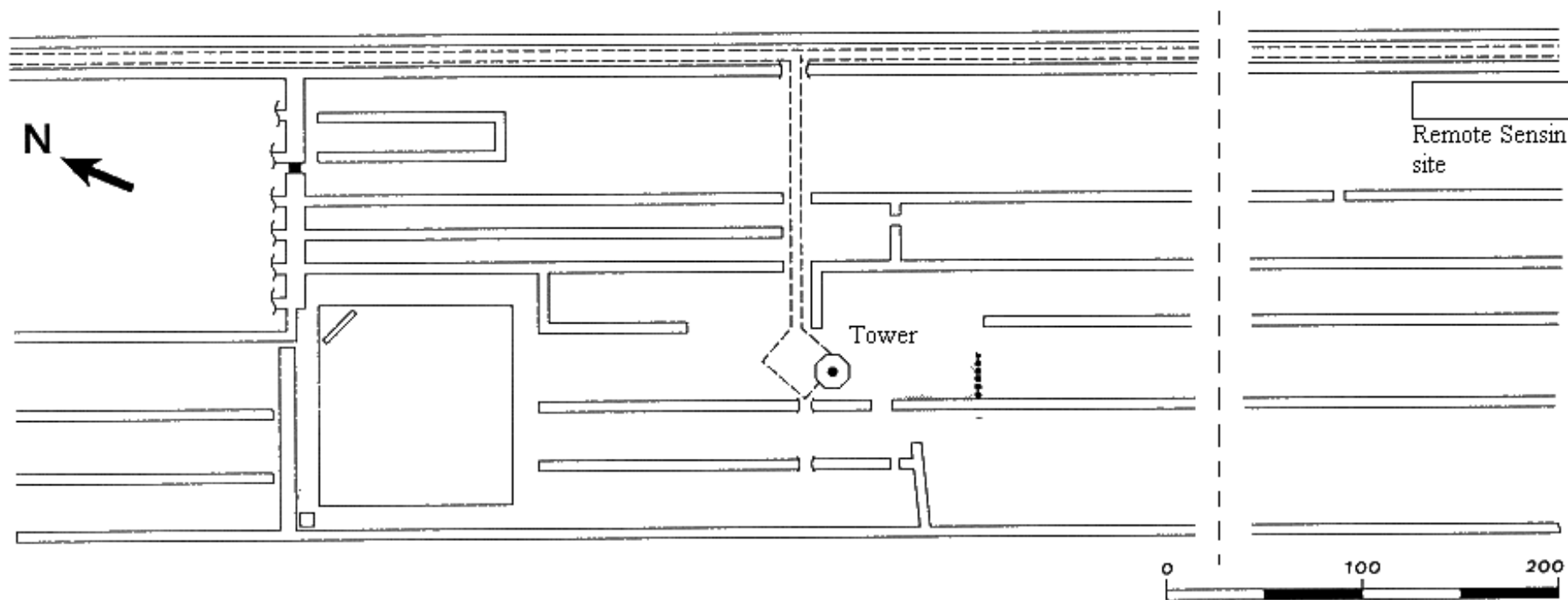
- August 1 - August 14, 2001
- Instruments from:
 - MIUB, CNRS, DWD, Chalmers, UniBe, St. Petersburg, UKMO (μ -radiometers)
 - KNMI, GKSS (35 and 94 GHz cloud radar)

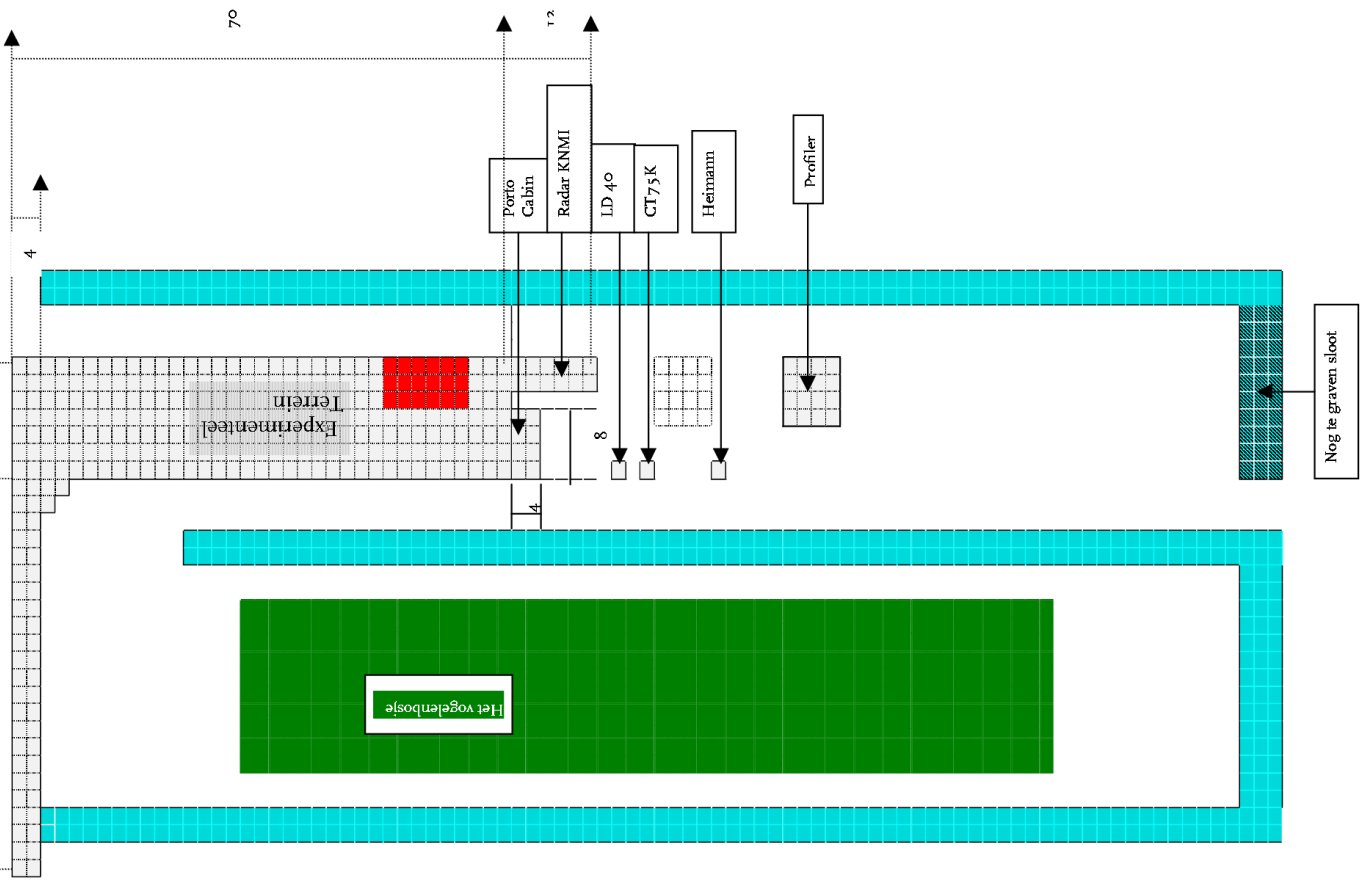


Microwave intercomparison Campaign

- August 1 - August 14, 2001
- Instruments from:
 - MIUB, CNRS, DWD, Chalmers, UniBe, St. Petersburg (μ -radiometers)
 - KNMI, GKSS (35 and 94 GHz cloud radar)
- Location: Cabauw

Cabauw Site





Zitdeweg



Cabauw Site

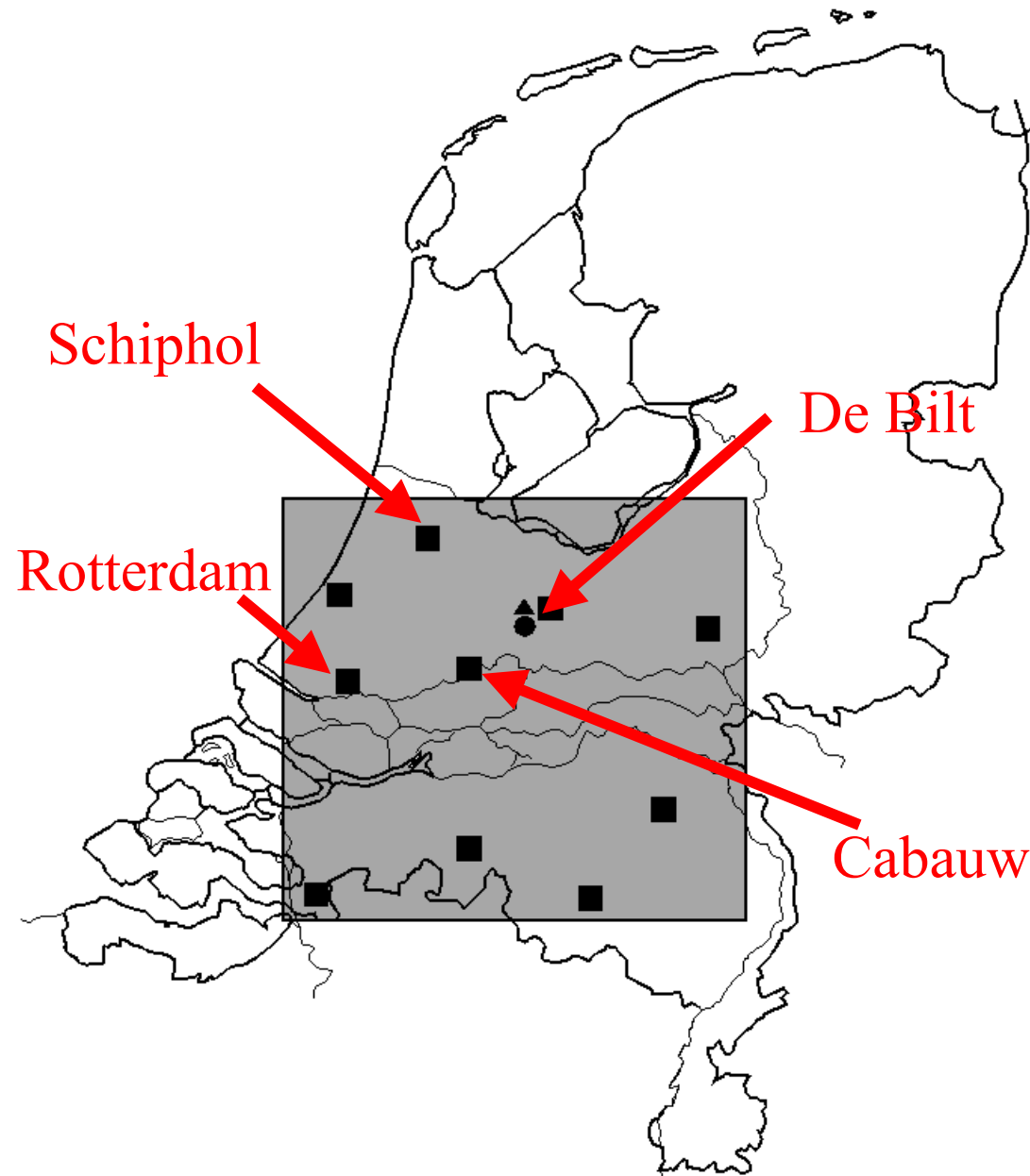
- Radar
 - 1.2 GHz wind profiler + RASS
 - 3, 35 and 94 GHz radars
- Micro wave radiometer
 - MICCY (22 channels)
 - MARSS (89, 157, 183 GHz, UKMO)
- LIDAR
 - CT75K lidar ceilometer
 - 1064nm, 532nm backscatter lidar (RIVM)

Cabauw Site

- Radiation
 - SW in/out, SW direct/diffuse, LW in/out
 - Spectrometers
 - IR radiometer
- Tethered balloon (Univ. Utrecht)
- Radiosondes (Royal Army)
- 200m Meteorological tower
- Cloud Video
-

BBC Network

- August 17 - September 28, 2001
- Location Cabauw and 5 surrounding stations (area typically $100 \times 100 \text{ km}^2$)
- Instrumentation at each station:
 - microwave radiometer
 - lidar ceilometer
 - IR-radiometer
 - shortwave radiation



Aircraft

- MERLIN IV, Meteo France (CAATER)
- Partenavia, ITF Leipzig (4D-Wolken)
- Cessna, FU-Berlin (4D-Wolken)

- GKSS provides the particle probes
- Discussions with:
 - Air traffic control Schiphol
 - Royal Air Force

Concluding Remarks

- Aircraft measurements for validation of:
 - ground based remote sensing instruments
 - satellite retrievals
 - models
- Major interest in LWC -profiles over the BBC area