



WMO/IOC/UNEP/ICSU  
GLOBAL CLIMATE OBSERVING  
SYSTEM (GCOS)

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**3rd GRUAN Implementation-  
Coordination Meeting (ICM-3)**  
Queenstown, New Zealand  
28 February – 4 March 2011

Session 5

## **Site report: Cabauw, Netherlands**

*(Submitted by Martin de Graaf)*

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### **Summary and Purpose of Document**

This document contains an overview of the measurement programme at the Cabauw site with respect to GRUAN requirements, and addresses the questions to be discussed in this session.

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Cabauw, The Netherlands  
GRUAN Site Status Update  
February 2011

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### **Personnel Change**

- Martin de Graaf - TT6 site representative  
(martin.de.graaf@knmi.nl)
- Arnoud Apituley has joined KNMI staff, heading the Raman lidar group.  
TT6 site representative, possibly TT3  
(apituley@knmi.nl)
- Reinout Boers changed position. Now researcher in Earth Observations and remote sensing.  
Participates in EMERGE. Possibly TT3  
(boers@knmi.nl)
- Siebren de Haan – GPS manager  
(haandes@knmi.nl)

## **Cabauw Developments 2010-2011**

- Arnoud Apituley has joined KNMI as head of the new Raman lidar group. Water Vapour measurement capability for the Raman lidar is currently being developed and improved, adding to GRUAN. AA has visited Raman lidar WV workshop organised by D. Whiteman.
- Standard 12-hourly Cabauw Radio Sondes are operationally being delivered to Lead Centre, following the Manual for the Data Management in GRUAN. All RS data for 2011 has been uploaded to LC. Continued delivery is ongoing on a daily basis.
- EMERGE project was not granted, but Reinout Boers still participates in the set-up of a MW-Radiometer Network.
- RB has published a paper on the observation of fractional cloudiness using ground-based remote sensing techniques. This is not a direct GRUAN focus, but clouds are ECV's and possibly important within GRUAN context.
- KNMI has put a high priority on filling the Cesar (Cabauw Experimental Site for Atmospheric Research) data base with QC data in a unified format. Cesar format is NetCDF and RS data from LC may be stored in Cesar data base. Conversely, the GRUAN data flow from Cabauw may benefit from the unification of all Cabauw data.
- Conversion of GPS data to Cesar/NetCDF format is underway (within a few months). This may facilitate preparation of GPS data for GRUAN purposes.
- Cabauw is super-site within EUMETNET / E-GVAP, which is a European effort for central processing and redistribution of nrt GPS data for operational meteorology. UK Met Office currently processes data from 400+ European GPS stations on an hourly basis and redistributes the QC data. GRUAN may benefit from this effort.
- KNMI has a position for the climatological reprocessing of 17 years' worth of GPS data, but currently no suitable candidates for the position have been found (suggestions are welcome).

## **Next steps**

- Next to the standard 12-hourly radiosondes, the scientific ozone sondes may be delivered to LC. These sondes are launched once a week.
- GPS data may be included
- Water vapour measurements of the Raman lidar can be improved to meet GRUAN standards.