

2nd GRUAN Implementation-Coordination Meeting (ICM-2)

Payerne, Switzerland
2-4 March 2010

Item 7.2.4

Site report: Cabauw, Netherlands

(Submitted by Reinout Boers)

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.



Koninklijk Nederlands
Meteorologisch Instituut
Ministerie van Verkeer en Waterstaat

The Netherlands Site Report

R. Boers



Developments 2009 - 2010

Personnel change

- Roeland v Oss is new research manager in charge of Cabauw (roeland.van.oss@knmi.nl)
- Martin de Graaf will be focussing on water vapour issues (Raman lidar....)
- Reinout Boers changed position [research in Earth Observations, remote sensing]



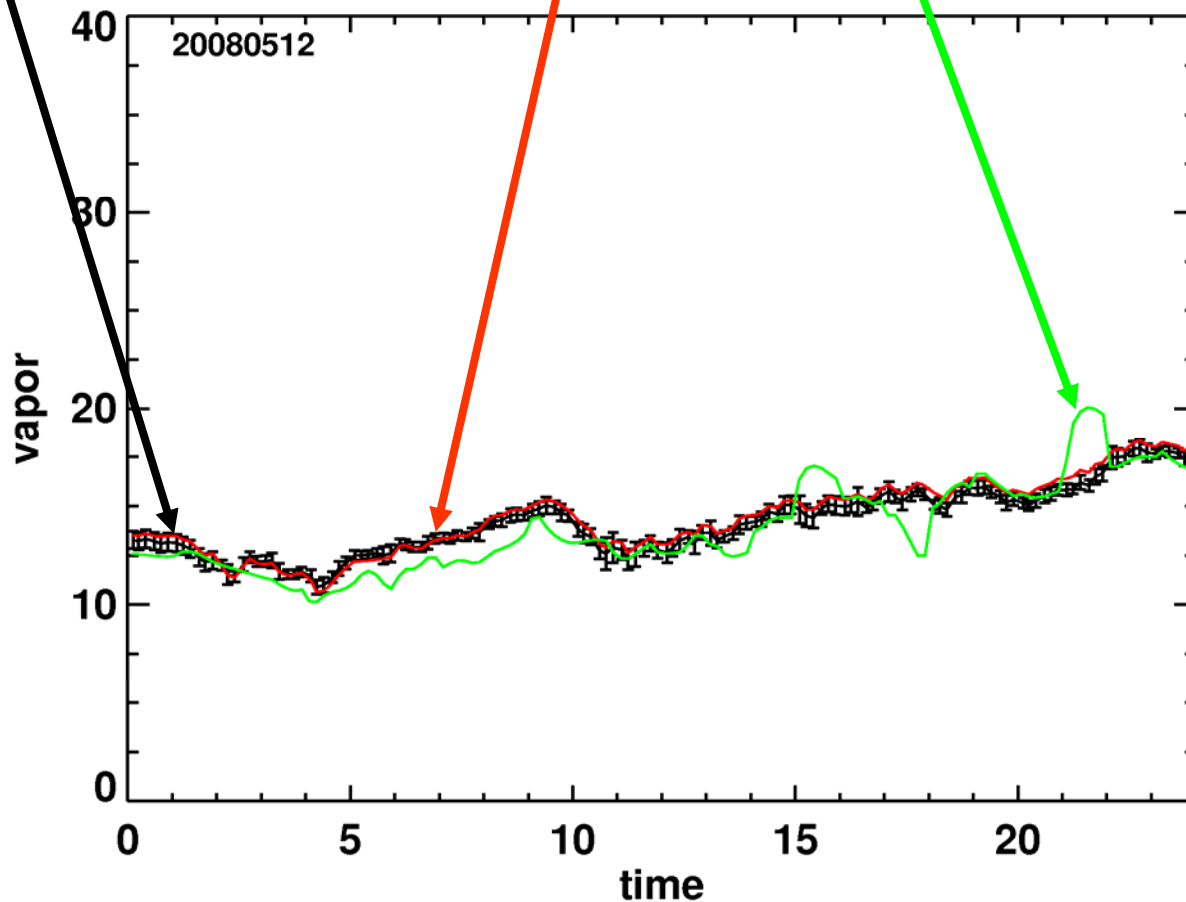
Developments 2009 - 2010

Research

- Initiation of climate processing of GPS water vapour
- Initiation of climate processing of MWR water vapour
- Determination of fractional cloudiness in the absence of the 'Observer'



Comparison of **GPS water vapor (green)** with MWR water vapor (**statistical processing, red**) and MWR water vapor (**full climatological processing and error propagation model**)





Additional comments based on the requested topics

- 1) KNMI radiosondes vis-à-vis GCOS 121: Not met. Needs new money for that. Program plan is being written up to government for added support for climate monitoring.
- 2) Additional water vapor measurements:
 - 1) GPS (NWP processing, but climate processing within four years),
 - 2) MWR mostly statistical processing, partly climate processing plus error bars (EU plan has been written to organise the EU - GRUAN partners, EMERGE)
 - 3) Raman lidar (just set up for water vapour)



Additional comments based on the requested topics

- 3) Limitations launch protocols. No reference sounding done, so no limitations. If ref - soundings were done, then they probably should to be synchronized with 12 hourly standard launches
- 4) Limitations on development of uniform data processing: manpower and guidelines that describe these processing schemes
- 5) GPS will be climatologically processed within 4 years, MWR can already be done that way, but needs manpower. Selected periods can always be processed
- 6, 7) All data including the regular sondes are centrally archived in the CESAR data base [which is now operational] + KNMI has open data access policy



Additional comments based on the requested topics

- 8) Help from Lead Centre: Letters when final proposal to Government is completed.
- 9) Hosting of local campaigns: Of course: we have a long experience in organising such campaigns
- 10) The largest infrastructural need is an investment in reference radiosondes. This involves very significant money, see below



The cost of such a program

90 sondes a year: 90 x 1000 EU	=	90 K per year
1 fte + overhead: 140 K	=	140K per year
Extra facilities : 20 K	=	20 K per year
		<hr/>
		250 K per
year		

Assumption: inflation of salary and maintenance of infrastructure keeps up with reduction in cost of probes, then

$$\text{total cost} = 25 \times 250 \text{ K} = 6.5 \text{ M over 25 years}$$