



# The Netherlands Site Report

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## Developments 2009 - 2010

### Personnel change

- Roeland v Oss is new research manager in charge of Cabauw ([roeland.van.oss@knmi.nl](mailto: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]



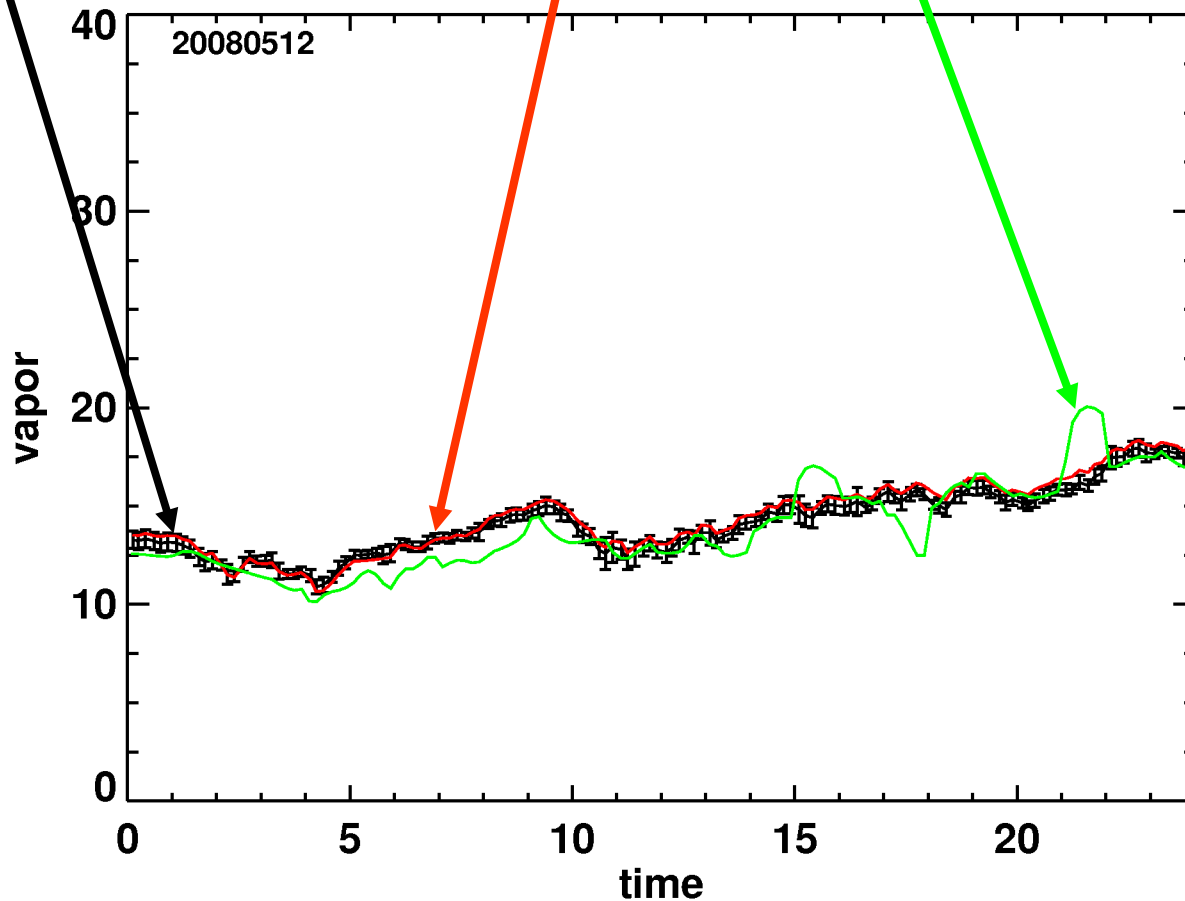
## Developments 2009 - 2010

### 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: $90 \times 1000$ 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

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