

## From the sky to the surface: climate monitoring and data acquisition

Wednesday December 9, Holland Climate House (Pavilion C7)

Organized by **Royal Netherlands Meteorological Institute (KNMI)**  
**Energy Research Center of the Netherlands (ECN)**  
**Delft University of Technology (TUD)**  
**Eindhoven University of Technology (TUE)**  
**Wageningen/University and Research, Alterra (WUR)**

Time	Topic	Session contents
10.00-18.00	Monitoring of atmospheric composition	Running presentations and posters on monitoring of concentration and anthropogenic emissions of NO <sub>2</sub> , methane, aerosols and ozone. The development of satellite instruments in the Netherlands will also be presented.
10.00-10.30	Monitoring of atmospheric composition by satellites	The Netherlands is pioneering efforts to detect trace gases with satellite instruments (OMI and SCIAMACHY). Results of ozone, NO <sub>2</sub> , methane, and aerosols will be shown and plans to continue these measurements with the Dutch initiated TROPOMI instrument will be addressed.
10.30-11.00	Going where the action is: Using in-situ observations to verify greenhouse gas emissions	If we want to get valid information on emissions from the atmospheric concentration, then measurements have to cope with high precision requirements and large transport model errors. After a presentation we will discuss the main advantages and disadvantages of in-situ observations with the audience.
11.00-11.30	A blueprint for climate monitoring in the Netherlands	Climate monitoring provides the empirical basis for understanding climate change and its consequences. We will discuss the basic philosophy of climate monitoring and a possible blueprint for monitoring in the Netherlands.
11.30-12.00	Multi monitoring system	We developed a monitoring system that measures greenhouse gas emissions in different ways and at different scales. In this session we give an introduction to this multi monitoring system and show how the system can be used for international evaluation.
<b>12.00</b>	<b>Lunch</b>	
14.00-16.00	Going where the action is	Four short presentations on how to use an integrated data monitoring system for climate related decision making. An international panel with representatives of potential users and researchers will reflect on the presentations.
16.15-17.15	The Antarctica Challenge: A Global Warning	We present a film by Mark Terry about the imminent danger of Antarctica's melting land ice and its impact on the rest of the world through rising seas levels.
<b>18.00</b>	<b>Reception</b>	

## Contents of the day

Current climate change is caused largely by changes in atmospheric chemical composition. From space we can detect the changes in temperature, precipitation, aerosols, biomass and greenhouse gas emissions. However, for the assessment of impacts of climate change and for the identification of viable adaptation and mitigation measures we need data at a finer temporal and spatial scale.

In the Netherlands we are currently developing a system to monitor the climate system including the atmospheric composition and the emissions of greenhouse gases. This climate monitoring system, in combination with research, will provide a basis for understanding climate change and its economic and social consequences. By definition it is based on a multi-disciplinary approach, and involves space-based as well as air-borne or ground-based instruments.

In the Holland Climate House there is an example of a land cover map of East-Kalimantan based on world leading technology using radar images. This detailed map can be used to track changes in forested areas.

### Overview of presentations by topic

10.00-10.30	Prof. Pieter Levelt, KNMI/TUE	Monitoring of atmospheric composition by satellites
11.00-11.30	Chair: Prof. Herman Russchenberg, TU Delft	A blueprint for climate monitoring in the Netherlands
11.30-12.00	Ronald Hutjes, Wageningen UR, Alterra	Multi monitoring system
14.00-16.00	Chair: Eddy Moors, Wageningen UR, Alterra	Going where the action is
	Panel:	
	<ul style="list-style-type: none"><li>• Werner Kutsch, ICOS, representative Germany</li><li>• Maria Jose Sanz, UNFCCC (tbc)</li><li>• Andreas Barkman: EEA</li><li>• Guy Brasseur, Climate Service Center - Germany GKSS (tbc)</li><li>• Bas Clabbers, Dutch Ministry of Agriculture, Nature and Food Quality (tbc)</li></ul>	