

CS 02 The CESAR Observatory: climate monitoring and process studies

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Context / Social problem

Considerable progress has been made with research into the behaviour of the climate system. Although the situation is still subject to uncertainty, we can state that human activities during the last 50 years have led to a warming of the earth. However, more research is needed to reduce the remaining uncertainties. In particular, there is need for systematic and long-term observation in order to identify and understand the often slow climatic fluctuations.

What are the results, and who are they for?

The CESAR Observatory is a leading international institution in its field. It sits comfortably in a global network of climate stations and contributes to improving satellite observations. The goal of the observatory is to conduct long-term observations and make the results available to the international research community.

What do we know/not know?

The atmosphere is an important component of the climate system. The interaction between radiation, dust and clouds, rain formation and the water balance, and energy exchange at the earth's surface are all insufficiently understood facets of the climate, and can only be studied in relation to a wider interconnected whole.

What is being studied?

The Netherlands has a world renowned atmospheric observatory at Cabauw near Lopik: the CESAR Observatory. It has a 213 metre high measuring mast, ground measurement equipment and remote sensing apparatus has been erected to map the atmosphere to a height of 15 kilometres. The objectives within the Climate changes Spatial Planning programme are to:

1. develop essential infrastructure and measurement strategies for climate monitoring;
2. measure aerosols, clouds, radiation, turbulence, land-atmosphere exchange, precipitation and soil moisture in the context of climate and weather modelling;
3. contribute to the reduction in uncertainties in climate scenarios.

