

## **ACOM Seminar**

**Air quality from space: indicator of human activity.**

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**Date: Monday, May 16th, 2022, 3:30pm – 4:30pm**

**Links: <https://operations.ucar.edu/live-acom>**

### **ABSTRACT**

In the 19th and 20th century the chemical composition of the atmosphere did change drastically as a result of human activities. Therefore, the Dutch Nobel Prize winner Paul Crutzen called this time period the 'anthropogenic' epoch. The rapid worldwide growth of megacities, and its associated strong increase in air pollution, are clear examples of this. These are developments that will continue to be important in the coming decades, even with the agreements made during the recent UN climate change conference in Glasgow (2026) and the Global Methane Pledge, signed by 100 countries around the world, to reduce methane emission with 30 % by 2030.

Nowadays we can measure the chemical composition of the atmosphere with satellites. With innovative satellite instruments of Dutch origin, such as OMI and TROPOMI, daily global maps of air pollution and greenhouse gases are measured on urban scale resolution.

During the lecture, an outline will be given of the major research questions in the atmospheric climate domain, and their importance for air quality and climate policy. Further, the satellite measurement technique will be explained, and what these measurements can bring for as well research as climate policy, now and in the future. Examples of COVID-19 lockdown reduction of air pollution, methane emission from the oil and gas industry, as well as the potential of satellite measurements for the nitrogen deposition policy, will be shown. The use of satellite observations for countries and continents from the global south, like Africa, will be addressed as well