

Report on the fourth ACAM Training School

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DATES:

22 June – 01 July 2021

ORGANIZING COMMITTEE:

F. Fierli (EUMETSAT), B. Adhikary (ICIMOD), R. Gautam (EDF), D. Vomhofe (EUMETSAT)

CONTRIBUTERS:

H. Schlager (DLR), M. Chin (NASA), S. Ghude (IITM), L. Pan (NCAR), I. Aben (SRON), J. Flemming (ECMWF), M. Parrington (ECMWF), H. Jethva (NASA), J. Wagemann (ECMWF)

MEETING VENUE:

Online

NUMBER OF PARTICIPANTS: 30

NUMBER OF COUNTRIES/REGIONS: 14

ENDORSEMENTS:

SPARC, IGAC

WORKSHOP WEBSITE:

<https://training.eumetsat.int/course/view.php?id=413>

ACAM WEBSITE:

<https://www2.acom.ucar.edu/acam>



Background

ACAM (Atmospheric Composition and the Asian Monsoon) is a joint SPARC/IGAC activity that focuses on the connection between Asian monsoon dynamics and atmospheric composition, having important regional and global impacts. The aim is to build strong international collaborations for ACAM science, and to promote early career scientists (e.g. PhD students and Post Docs) in the monsoon region.

Training school Report

Following the previous ACAM training schools in Bangkok, Thailand, 2015, Guangzhou, China, 2017, and Bangi, Malaysia, 2019, the training school in 2021 provided again an excellent opportunity for students and early career scientists to learn about ACAM related science and to get familiar with how to access datasets from operational satellite instruments and chemistry-transport models, and to conduct small joint projects during the training school.

The fourth ACAM Training School was for the first time conducted as a fully virtual school due to the Covid-19 pandemic. It took place from 22 June until 01 July 2021 hosted by EUMETSAT in Darmstadt, Germany. It included 30 early career scientists and graduate students from 14 countries selected out of 81 applications. The focus of the training school was on “Satellite Observations and Analysis of Atmospheric Chemistry and Aerosols in the Asian Monsoon region”. The school included lectures, practical exercises on data discovery, small student projects, and a special evening round-table event on science questions related to ACAM. Also, there was an opportunity for the participants of the training school to briefly introduced themselves

After an introduction to ACAM by **H. Schlager**, lectures were given by **S. Ghude** on ACAM science basics and **R. Gautam** on monitoring by satellites. **L. Pan** highlighted key science questions of transport and chemistry and **I. Aben** discussed the processing of satellite data. Further lectures were given by **H. Schlager** on results of aircraft campaigns during the Asian summer monsoon and **J. Flemming** on global atmospheric modeling. **B. Adhikary** discussed regional atmospheric modeling and **M. Parrington** and **H.**

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Jethva addressed issues of fire emissions and air quality. Finally, **H. Schlager** presented results from aircraft measurements in pollution plumes of megacities and major population centers in Asia.

The practical part of the school started with an introduction by **F. Fierli**. Then, satellite data products and open-source platforms/scripts for reading, visualization, and analysis of data (e.g. Google Earth Engine and Python scripts) were presented. The various introduced satellite observations included trace gas (e.g. TROPOMI) and aerosol products (e.g. CALIPSO vertical aerosol profile). In addition, the Copernicus Atmospheric Monitoring Service was introduced (CAMS trace gas model products). During the second week of the training school the participants worked in groups to perform small projects using satellite observations and CAMS model output.

This was the second time that the ACAM training school included also practical work in groups besides the science lectures. This concept for the ACAM training school was again very well received by the participants. After the event the participants were able to evaluate the training school. Overall the students and early career scientists scored the lectures and practical work 4.8/5.0 and altogether 85% of the participants would recommend the training school to their colleagues – great success.



Figure 10: Participants during the round-table discussion on ACAM science questions.