

Atmospheric Composition and the Asian Monsoon (ACAM): A Joint Activity of SPARC and IGAC

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While the meteorology of the Asian monsoon has been studied for more than a half century, its chemical impact and climate coupling through transport are new research topics that have emerged in the last decade. With rapid population and economic growth across the monsoon region, it becomes a pressing concern that the monsoon convection coupled to surface emissions is playing a significant role in the region's air quality. The uplift of pollutants also enhances aerosol–cloud interactions that may change the behavior of the monsoon. The chemical transport effect of the monsoon system is seen from satellites as an effective transport path for pollutants to enter the stratosphere. The monsoon system is therefore relevant to scales and processes bridging regional air quality, climate change, and global chemistry-climate interaction.

The ACAM activity is motivated by the need to create collaborative opportunities between the international and regional research communities and scientifically focuses on four themes:

- Emissions and air quality in the Asian monsoon region;
- Aerosols, clouds, and their interactions with the Asian monsoon;
- Impact of monsoon convection on chemistry;
- UTLS Response to the Asian Monsoon.

Collaborations are facilitated through biennial workshops. Three successful workshops have been held in Kathmandu (2013), Bangkok (2015), and Guangzhou (2017). Collaborative activities are also facilitated through working groups. Currently, there are four working groups, with activities on 1) data sharing, 2), interacting with global and regional modeling communities, 3) encouraging coordinated observations, regional measurement activities, and the development of future field campaign concepts, and 4) providing training opportunities for early career scientists on observations and modeling, with emphasis on the use of models and satellite data. This presentation will summarize the activities of ACAM.

Key words: Asian Monsoon, Convective transport, Air Quality, Chemistry-Climate Interactions

References

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