

## **Assessment of the Impact of The East Asian Summer Monsoon on the Air Quality Over China**

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Air pollution is one of the most important environmental problems in developing Asian countries like China. In this region, studies showed that the East Asian monsoon plays a significant role in characterizing the temporal variation and spatial patterns of air pollution, since monsoon is a major atmospheric system affecting air mass transport, convection, and precipitation.

Knowledge gaps still exist in the understanding of Asian monsoon impact on the air quality in China under the background of global climate change. For the first time satellite observations of tropospheric ozone and its precursors will be integrated with the ground-based, aircraft measurements of air pollutants and model simulations to study the impact of the East Asian monsoon on air quality in China.

We apply multi-platform satellite observations by the GOME-2, IASI, and MOPITT instruments to analyze tropospheric ozone and CO, precursors of ozone (NO<sub>2</sub>, HCHO and CHOCHO) and other related trace gases over China. Two years measurements of air pollutants including NO<sub>2</sub>, HONO, SO<sub>2</sub>, HCHO and CHOCHO at a regional back-ground site in the western part of the Yangtze River Delta (YRD) in eastern China will be presented. The potential of using the current generation of satellite instruments, ground-based instruments and aircraft to monitor air quality changes caused by the East Asian monsoon circulation will be presented. Preliminary comparison results between satellite measurement and limited but valuable ground-based and aircraft measurements will also be showed.