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Assessment of the Impact of The East Asian Summer Monsoon on the Air Quality Over China from spac

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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.

Publicly available in situ observations cannot provide sufficient spatial coverage and high consistence in data quality for a long-term period. Therefore, knowledge gaps still exist in the understanding of Asian monsoon impact on the air quality in China under the background of global climate change. Satellite retrievals with high spatial coverage and high consistence for a long period can well document the change of air pollution with monsoon.

We apply multi-platform satellite observations by the GOME, SCIAMACHY, GOME-2, IASI, GOMOS, MIPAS and MOPITT instruments to analyze tropospheric ozone and CO, precursors of ozone (NO_x, HCHO and CH4) and other related trace gases over China. The potential of using the current generation of satellite instruments to monitor air quality changes caused by the East Asian monsoon circulation will be presented. Preliminary comparison results between satellite measurement and ground-based and aircraft measurements will also be showed.