Monitoring and Assessment of Regional air quality in China using space Observations, Project Of Long-term sino-european co-Operation

From 2013-09-27 to 2017-04-01, closed project

Objective

Due to the strong economic growth in the China in the past decade, air pollution has become a serious issue in many parts of the country. Therefore, up-to-date regional air pollution information and means of emission control for the main pollutants are important for China. Especially, the Beijing-Tianjin-Hebei region, the Yangtze River and the Pearl River deltas are known as three focal regions with serious air pollution where air quality policies are very important.

Within the FP6 project AMFIC atmospheric environmental monitoring over China was addressed by a team of both Chinese and European scientists. Within AMFIC it was concluded that modelling of air quality and therefore the forecast capabilities are hampered by the rapidly changing emissions due to economic growth. In addition, air quality measures could not directly be related to changes in emissions.

Therefore, within the follow-up proposal - MarcoPolo - the focus will be on emission estimates from space and the refinement of these emission estimates by spatial downscaling and by source sector apportionment. Air pollutants cover both anthropogenic and biogenic sources. A wide range of satellite data will be used from various instruments. From these satellite data, emission estimates will be made for NOx, SO2, PM and biogenic sources. With various state-of-the-art techniques emission inventories will be created and intercompared. By combining these emission data with known information from the ground a new emission database for MarcoPolo will be constructed. Due to the strongly growing economy in China regular emission inventories are quickly outdated. Within MarcoPolo we will have a monthly update of the emissions based on the latest satellite observations. The improved emission inventory is input to regional air quality models on meso-scale and urban-scale. End-users and decision makers will be informed about air quality via visualized model results and forecasts.

Related information

Report Summaries

Final Report Summary - MARCOPOLO (Monitoring and Assessment of Regional air quality in China using space Observations, Project Of Long-term sino-european co-Operation)

News

Towards the better forecasting of destructive dust storms
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Subjects

Other Technology

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