



ESA-MOST Dragon Cooperation

中国科技部-欧洲空间局合作“龙计划”

DRAGON 2 FINAL RESULTS AND DRAGON 3 KO SYMPOSIUM

“龙计划”二期总结研讨会暨三期启动会

Air quality Monitoring and Forecasting in China

ID 10663

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Objectives

Main theme:

- Study air quality over China using satellite data
- A better understanding of the sources of air pollution
- Study the effect of aerosols on the climate.

Specific research areas:

- Deriving emissions of air pollutants from satellite data for East-China.
- Study anthropogenic and biogenic emissions in the Beijing area.
- The temporal and spatial evolution of sulphur dioxide over Europe and China.
- Validation of NO_x emissions using ground observations in several cities in China.
- Forecast of the air quality.
- Study of the relation between aerosols and NO₂.
- The effect of aerosols on the climate.
- Validation of aerosol satellite data with the Chinese AERONET-like aerosol network.
- The impact of the anthropogenic working cycle on regional meteorological and climatic parameters due to the aerosol indirect effects.
- Constructing a climatology on Asian dust aerosol type.

Training of young scientists

- Several young scientists of the participating institutes will use the research within this project for their PhD or master research.
- During the project we would like to exchange students between institutes to increase the working-experience of the students.
- Results will be used in advanced courses at the Universities to inform PhD and master students about the most recent progress in the field of remote sensing, air quality and climate change, with focus on China.

Satellite data

- Satellite data from GOME, SCIAMACHY, OMI, GOME-2, FY-3, MODIS and CALIPSO is needed.
- However, data is usually available for the consortium, for example via the TEMIS web-site or other public web-sites.

Other data requirements

- Access to Chinese ground observations (e.g. Chinese AERONET) is very important for our project.
- For high resolution modeling over north-east China it would be valuable to obtain access to the following data:
 - emission inventories for northeast China (150km x 200km) covering Beijing) for the following pollutants NO₂, NO, SO₂, PM₁₀, VOCs
 - detailed proxy data such as population density maps, land cover map, fraction of vegetation cover, major road and rail maps, location of major point sources (industry..) etc
 - concentration boundary conditions from a global model for the same area for comparison studies