

MONITORING AND ASSESSMENT OF REGIONAL AIR QUALITY IN CHINA USING SPACE OBSERVATIONS (MARCO POLO)

R. van der A^{a,*}, B. Mijling^a, J. Ding^a, D. Balis^b, J. Stavrakou^c, A. Mahura^d, K. Kourtidis^e, G. De Leeuw^f, J. Bai^g, B. Martínez^h,
V. Amiridisⁱ, P. Xie^j, R. Timmermans^k, L. Zeng^l, Q. Zhang^m, N. Veldemanⁿ, Y. Xue^o

^a Royal Netherlands Meteorological Institute (KNMI), De Bilt, Netherlands - avander@knmi.nl

^b Aristotle University of Thessaloniki (AUTH), Greece

^c Belgian Institute for Space Aeronomy (BIRA-IASB), Belgium

^d Danish Meteorological Institute (DMI), Denmark

^e Democritus University of Thrace (DUTH), Greece

^f Finnish Meteorological Institute (FMI), Finland

^g Institute of Atmosphere Physics (IAP), China

^h IsardSAT, Spain

ⁱ National Observatory Athens (NOA), Greece

^j Hefei Institute of Physical Sciences, China

^k Netherlands Organization for Applied Scientific Research (TNO), Netherlands

^l Peking University, China

^m Tsinghua University, China

ⁿ Flemish Institute for Technological Research (VITO), Belgium

^o London Metropolitan University, UK

THEME: ATMC.

KEY WORDS: air quality, China, emission estimates

ABSTRACT:

In this paper we will present the EU-project 'MarcoPolo'. The main objective of MarcoPolo is to improve air quality monitoring, modelling and forecasting over China using satellite data and by combining Chinese and European expertise. 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. For this reason up-to-date regional air pollution information and means of emission control for the main pollutants are becoming more and more important. Within a previous EU-project, 'Air Quality Monitoring and Forecasting in China' (AMFIC), it was concluded that modelling of air quality are hampered by the rapidly changing emission data due to economic growth in China. In addition, air quality policies could not directly be related to changes in emissions. Therefore, within the MarcoPolo project, the focus will be placed on emission estimates from space and the refinement of these emission estimates by spatial downscaling and by source sector apportionment. A wide range of satellite data will be used from various satellite instruments to derive emission estimates for NO_x, SO₂, PM and biogenic sources. By combining these emission data with known information from the ground, a new emission database for MarcoPolo will be constructed. The improved emission inventory will be input to the regional and local air quality models.

* Corresponding author. This is useful to know for communication with the appropriate person in cases with more than one author.