

PROJECTFICHE (C60)

BILAT CHINA (Call' 010) PROJECTFICHE "IBBAC"

Impact of Biogenic Emissions on Beijing Air Quality and Climate

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CO-OPERATION PARTNERS

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FRAMEWORK AND SIGNIFICANCE OF THE PROJECT

Due to its high population density and rapid economic growth, Beijing ranks among the most polluted cities worldwide. Besides the demand for reliable anthropogenic emission data, the estimation of natural fluxes and their effects on air pollution is also needed since, e. g. global natural emissions from plants contribute up to 85% to the total amount of the emitted volatile hydrocarbons (VOCs). However, studies on biogenic VOC sources in China are quite few and past estimations are based on few field data sets. This project aims at evaluating the role of biogenic VOC emissions on air pollution in the Beijing area. This will be achieved through the combined use of atmospheric modeling tools and satellite and ground-based data sets.

SPECIFIC TASKS

The project comprises 8 tasks distributed in two main work packages as follows:

WP 1 : Biogenic emission estimates over north-eastern China

1.1 Historical biogenic emission record (1970-2010)

1.2 Improved representation of VOCs in the IMAGESv2 model

1.3 Improved VOC emission inventories using inverse modelling

1.4 Downscaling of emissions at resolution of air quality models

WP 2 : Model/data intercomparisons - Present and "climate change" model simulations

2.1 Ground-based measurements

2.2 Air quality modelling for Beijing area using regional/local models

2.3 Air quality modelling at coarse resolution using IMAGESv2

2.4 Climate change impact scenarios