

An overview of Atmospheric Pollution and Human Health in a Chinese Megacity research programme (APHH-Beijing)

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APHH-Beijing (Atmospheric Pollution and Human Health in a Chinese Megacity) is an international collaborative project to examine the emissions, processes and health effects of air pollution in Beijing. It has four research themes: (1) sources and emissions of urban atmospheric pollution; (2) processes affecting urban atmospheric pollution; (3) exposure science and impacts on health; and (4) interventions and solutions to reduce health impacts. The four themes are fully integrated to provide process understandings for developing solutions to air pollution problems in Beijing and beyond.

This presentation provides an overview of APHH-Beijing programme, in particular the innovative aspects of the programme, including

(1) novel eddy covariance emission flux observations from the Institute of Atmospheric Physics meteorological tower, integrated with satellite retrievals and numerical models to validate the bottom-up emission inventories,

(2) comprehensive observations of atmospheric gaseous and aerosol species integrated with atmospheric physics measurements to deliver an improved understanding of the air pollution processes, and

(3) novel cardiovascular health indicator measurements, integrated with personal exposure and complementary fixed station source apportionment studies to pinpoint the sources of pollution that cause adverse human health effects.

It will also introduce the joint field campaigns by the Theme 1, 2 & 3 as a key integrating activity of the programme. It will provide information on the measurements being made during the field observations as well as the background information, particularly the air quality and meteorological condition that put the field observations in the context of longer-term trends in air quality and synoptic-scale meteorological conditions.