



Press Release

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RECORD OF POLLUTION - The SHARE - NCO-P station at Mt. Everest records a never registered peak of concentration of pollutants like those of the urban areas

BOLOGNA - Also this year with the development of the pre-monsoon season, Himalayan peaks experience alarming levels of atmospheric pollution. This results from the SHARE (Stations at High Altitude for Research on the Environment) project, promoted by the Ev-K2-CNR Committee and pointed out by the studies and observations of the Bologna ISAC-CNR and Grenoble LGGE-CNRS research group at the Nepal Climate Observatory – Pyramid, the Ev-K2-CNR station installed at 5079 m a.s.l., on the slopes of Mt. Everest.

About a month ago we entered in the pre-monsoon season that favours the transport to Himalayan high altitudes of the pollutants which constitute the Asian Brown Cloud, a mix of pollutants that covers the Indian and South Asian plains. “The values of pollutants observed during the first days of April are over the already high levels reached in the last years. In these days the black carbon was very close to $6 \mu\text{g m}^{-3}$ - says Angela Marinoni, ISAC researcher - while the PM1 (particulate matter mass) exceeded the $100 \mu\text{g m}^{-3}$, a never registered value since the NCO-P Observatory started its research activity in the framework of the Atmospheric Brown Clouds UNEP project”.

The presence of these pollutants in the atmosphere darkens the clear view of the Khumbu Glacier, as you can see from the NCO-P webcam (<http://evk2.isac.cnr.it/realtime.html>). “These worrying concentrations of particulates - says Paolo Cristofanelli, in charge for the SHARE atmospheric activities - are coupled with high levels of ozone, a high oxidizing greenhouse gas that forms in the atmosphere in presence of primary pollutants and solar radiation. Thanks to the conditions of extreme drought that characterizes the pre-monsoon season in Southern Asia, one of the main sources of these high concentrations of pollutants seems to be linked with the frequent forest fires, also connected to agricultural practices, that break out in this period of the year in the areas of Nepal and Northern India, besides Indochina.”

These observations confirm the alarming results of the first four years study of the SHARE project that registered in proximity of the Himalayan glaciers concentrations of pollutants similar to those of the urban areas.

Every year during the pre-monsoon season, at the SHARE NCO-P station the highest values of the year are registered, with 30 minutes averaged concentrations of black carbon that reached the $5 \mu\text{g m}^{-3}$ and with values of PM1 between 50 and $70 \mu\text{g m}^{-3}$, concentrations that exceed also the alarm threshold fixed by the European Community for the urban air quality.

“The observations made at the NCO-P station are worrying - says Paolo Bonasoni, scientific head of the SHARE project - because the pollutants, through Himalayan valleys, acting as chimneys, may be transported

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till medium and high troposphere, where they considerably increase their lifetime and may accumulate for being transported even on long distances”.

Moreover, as showed by a study performed in collaboration with the NASA Goddard Space Flight Center, an estimation of the deposition processes of these pollutants on Himalayan glaciers may favor a significant increase of their natural melting. This appears even more important because Himalayan glaciers represent one of the main sources of fresh water for Southern Asia, one of the most populated areas of the world.

A “Near Real Time” report of principal results registered during April by the NCO-P station was sent to Veerabhadran Ramanathan, chair of the UNEP-ABC Project and to the major researchers involved in the ABC studies, that shared the concerns for the data brought out by the recent observations realized in the framework of the SHARE project. The report will be soon available also on the UNEP-ABC web site and spread through the UNEP-ABC newsletter.

Attachment 1

CHART - Trend of the concentration of black carbon (in red) and of the number of ultra-thin particles registered at the Nepal Climate Observatory – Pyramid (March 7 – April 8, 2010). Especially evident is the increase registered starting from April 4, 2010. Graph are plotted using 1 minute raw and unscreened data

Attachment 2

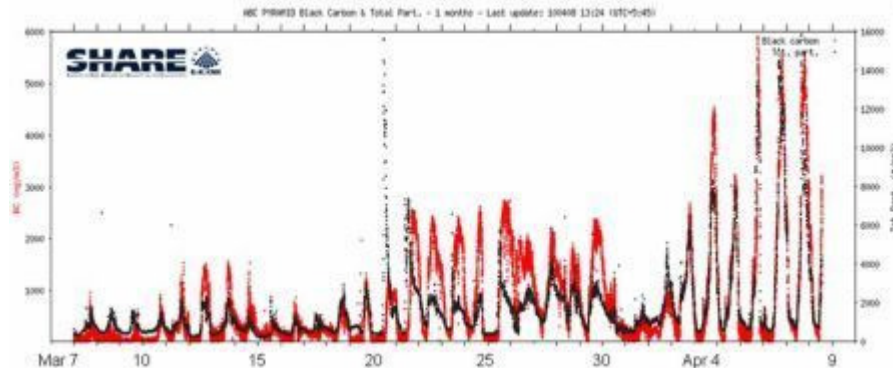
WEBCAM PHOTO - April 7, 2010: image of the Khumbu Glacier darsene by the atmospheric pollutants as results at the Nepal Climate Observatory – Pyramid installed at 5079 m a.s.l., near the Everest base camp.

Attachment 3

WEBCAM NCO-P PHOTO Morning Conditions

Attachment 4

WEBCAM NCO-P PHOTO Afternoon Conditions



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