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Observations of climate altering gases at a Himalayan site

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The Himalayan-Karakorum range, for its elevation and geographic location, represents an ideal place for studying long-range pollutant transport systems on a regional scale and for monitoring changes induced by mechanisms that act on a global scale through monsoon circulation. This area is placed in the middle of two of the most densely populated and very rapidly developing world sites: India and China. In these countries, the increased industrial activities and vehicular traffic leaded to a growth of anthropogenic pollutant emissions. At the foot of Mt. Everest the ABC-Pyramid Laboratory has been installed in February 2006 at the altitude of 5079 m a.s.l in the frame of the SHARE-Asia EV-K^2-CNR project. The development of this station allows continuous in-situ measurements of chemical, physical and optical properties of aerosol and ozone. Also, non-continuous measurements of climate-altering halogenated gases are carried out which are presented here. Grab samples have been collected on a weekly basis and then analysed by GC-MS preceded by enrichment on specific sorbent resins. Calibration of the instruments is conducted via the working standards which in turn are linked to the AGAGE (Advanced Global Atmospheric Gases Experiment) network calibration scales SIO-98 and UB-98. Results are compared with those obtained in a European mountain station, where such gases are continuously monitored.