



## Variation of HONO and other air quality indicators in the city of Beirut

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Mediterranean region experiences high pollution episodes as a result of its closed location and hot-humid long summers. However, few long-term field measurements have been conducted along the Eastern Mediterranean coast in general and in Arab countries, in particular. Hence, a project characterizing the air quality in Beirut has been launched with the support of the municipality of Beirut, the Saint Joseph University (Lebanon) and the Ile de France Council (France). On one hand, air samples were taken by passive samplers covering the entire city to measure the NO<sub>2</sub> and SO<sub>2</sub> mixing ratios. On the other hand, online analyzers were installed in an environmental laboratory for continuous monitoring in an urban background site.

The evolution of pollutants in the troposphere depends on hydroxyl radical levels as it is a key oxidant for their degradation. As nitrous acid (HONO) is a significant photochemical precursor of the hydroxyl radical, it might play an important role in tropospheric chemistry. The sources of nitrous acid in the troposphere, however, are still poorly understood. In March and April 2006, a field study was set up in the city of Beirut to measure HONO and HNO<sub>3</sub> in regard to other pollutants. For this, the Nitro-MAC instrument has been developed relying on the studies of Huang *et al.* (2002). It allows measurements of gaseous nitrous and nitric acids with a detection limit of 1 pptv for each compound.

In this communication, an attempt to evaluate the variation of air quality indicators in

the city of Beirut (in the urban background site) is presented in the context of assessing regional and local emission sources. Furthermore, NitroMAC is briefly presented and the results obtained during the HONO campaign will be discussed.