



A scientific and operational project for monitoring AOD and PM in Alto Adige/South Tyrol: outlines, first results and perspectives.

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The European Academy (EURAC) and the Autonomous Province of Bozen/Bolzano have started a new project for monitoring air quality in South Tyrol/Alto Adige. The project is both scientific and operational. Starting from in-situ data of particulate matter (PM) concentration and integrating them with remote sensing data, the aim of the project is to develop a daily product for monitoring and assessing air quality in South Tyrol.

South Tyrol is particularly interesting because of its orographic setting: the contrast between the valleys at relatively low altitude and the steep slopes of the mountains causes an accumulation of PM in the valleys, mainly in winter when inversions are frequent. Besides these natural factors, the presence of small-medium towns and of the Brennero motorway represents huge sources of pollution for the region which can become hazardous for human health.

In this paper, we first present the structure and objective of the aforementioned project, and second, results obtained from the time series analysis from 2005 to 2008 of the aerosol optical depth (AOD) product from NASA's MODIS instruments and the PM data provided by the Province are shown. Analysing the extreme events statistics of PM concentration, it is possible to observe a negative trend in the number of days in which the PM concentration is over the threshold of $50\mu\text{g}/\text{m}^3$. The source of this trend is investigated using different data sets and approaches.