



## **Airborne pollutant concentrations and health risks in selected Apulia region (IT) areas: preliminary results from the Jonico-Salentino project**

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The Jonico-Salentino project (PJS) is a multidisciplinary study funded by Apulia Region (Det. N. 188\_RU - 10/11/2015) aiming to assess health risk of people living in the cities of Lecce, Brindisi and Taranto. Citizens are exposed to emissions from industrial sources, biomass burning, vehicular, naval and air traffic, as well as from natural radioactive sources (radon).

In this context, this work presents some preliminary results obtained by the Unit of University of Salento (Lecce) during an experimental campaign carried out in the study areas. The campaign is devoted to (i) sample particulate matter (PM), (ii) measure micro-meteorological variables and (iii) evaluate exposure levels of residents to main pollutants. Specifically, PM is sampled using a low volume sampler, while meteorological variables (wind speed components and direction temperature, relative humidity, precipitation and global solar radiation) are measured by advanced instrumentation such as ultrasonic anemometers which allows for the estimation of turbulence fluxes. The early effects of exposure to air pollutants is evaluated by the frequency of micronucleus (a biomarker of DNA damage) in exfoliated buccal cells collected using a soft-bristled toothbrush from oral mucosa of primary school children enrolled in the study.

PM concentration data collected during the campaign are characterised from a chemical and morphological point of view; the analysis of different groups of particles allows identifying different natural and anthropogenic emission sources. This is done in conjunction to the investigation of the influence of local meteorology to elucidate the contribution of specific types of sources on final concentration levels. Finally, all data are used to assess the health risk of people living in the study areas as consequence of exposure to airborne pollutants.