

## **Experimental evidence of Saharan dust transport and interactions with aerosol chemical species at ground level during Trisaia campaign (May-June 2010).**

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Dust outbreaks originating in the Sahara Desert frequently impact on the Mediterranean area. These events may lead to high increase of fine and coarse aerosol fractions (Sajani et al., 2012). Moreover, the dust particles can react with different aerosol species contributing at increasing of the aerosol mass and changes of chemical composition (Aymoz et al., 2004). In order to improve the knowledge on the contribution of natural sources to coarse and fine particles in Central Mediterranean area, a two months (May and June 2010) field campaign was carried out at Trisaia ENEA Research Centre (Italy). Daily PM<sub>10</sub> and PM<sub>2.5</sub> aerosol particles samples were simultaneously collected on PTFE membranes for gravimetric analysis and quartz fiber filters for inorganic soluble ion concentrations, carbonaceous fraction and multi element analyses. Measurements of particles number size distribution were also performed using an optical particles counter (GRIMM EDM 107). In order to determine the dust elements such as Al, Fe, K, Ca, Mg and Ti, chemical multi-element analysis was performed by Inductively Coupled Plasma Mass Spectrometry.

During the campaign, several dust events occurred during the period according to AERONET (<http://www.esrl.noaa.gov/gmd/obop/mlo/programs/coop/nasa/aeronet/aeronet.html>), MODIS ([http://modis-atmos.gsfc.nasa.gov/MOD04\\_L2/index.html](http://modis-atmos.gsfc.nasa.gov/MOD04_L2/index.html)), and HYSPLIT (<http://ready.arl.noaa.gov/HYSPLIT.php>) data. This study shows experimental data on the state of fine and coarse aerosol fractions for a major dust event that occurred during June.

Sajani Z, Bonasoni S., Cristofanelli P., Marinoni A., Lauriola P., 2012, Only coarse particles from the Sahara?, *Epidemiology*, Vol. 23, Issue 4, p 642-643, doi: 10.1097/EDE.0b013e318258c23f.

Aymoz G., Jaffrezo J.-L., Jacob V., Colomb A., George Ch., 2004, Evolution of organic and inorganic components of aerosol during a Saharan dust episode observed in the French Alps, *Atmospheric Chemistry and Physics*, 4, 2499-2512.