

## LOAC



### Light Optical Aerosol Counter

LOAC determines the concentration of aerosols (numbers of aerosols per  $\text{cm}^3$ ) for 19 size classes between 0.3 and 100  $\mu\text{m}$  (with 10 size classes between 0.3 and 5  $\mu\text{m}$ ). The instrument can be used to document the physical properties of aerosols in the lower and middle atmosphere during specific events like pollution, transported sands, volcanic ashes, and for long-term monitoring.

Using a new optical design, LOAC can provide also an estimation of the main nature of aerosols (typically  $<1 \mu\text{m}$ , 1-5  $\mu\text{m}$ , 5-10  $\mu\text{m}$ , 10-20  $\mu\text{m}$ ,  $>20 \mu\text{m}$ ). These natures are liquid aerosols, carbon particulates (like soot) and non-carbonaceous solid particulates (mainly minerals).

An integrated solution including LOAC and M10 GPS radiosonde is available for launches under meteorological balloons with a total payload less than 1 kg. In this configuration, the instrument provides real time data using the radiosonde telemetry.



LOAC is already involved in several research programs of atmospheric studies (determination of concentration and nature of tropospheric and stratospheric aerosols). In particular, LOAC has recently provided accurate measurements of the size distribution of Sahara sands transported over Mediterranean Sea.

LOAC has been developed in cooperation with French research institute LCP2E-CNRS, and private companies Environnement SA and MODEM

