

ACTRIS: European aerosols, clouds, and trace gases research infrastruttura network. Gelsomina Pappalardo, IMAA-CNR (Italy); Adolfo Comeron, UPC BarcelonaTech (Spain).

ABSTRACT

The **Aerosols, Clouds, and Trace Gases Research Infrastructure** (ACTRIS) blends into a single, European-wide distributed infrastructure ground-based observation capabilities of atmospheric components having an immediate effect on air quality and, through their interplay and interaction with solar radiation, on the climate trend. ACTRIS aims at coordinating existing European research infrastructures on aerosols, clouds and trace gases developed over the last 10 years, and bringing them into the future as a single, enhanced one, able to evolve to serve atmospheric research needs over several decades.

Currently supported by a EU 7th Framework Programme integrated infrastructure project, ACTRIS builds upon the EUSAAR (in-situ aerosol measurements), CLOUDNET (cloud and aerosol profiling) and EARLINET (aerosol profiling) infrastructures, initiated by previous EU Framework Programme projects, and on the APRIORI infrastructure devoted to trace-gas measurements.

Lidars are present in ACTRIS in the study of aerosols and clouds. In particular, EARLINET gives ACTRIS the capability of measuring the vertical aerosol distribution through the coordinated operation of 23 advanced aerosol lidars distributed over Europe. Lidars are also used at many radar cloud-profiling stations to study the cloud lower boundary and the interaction between clouds and aerosols. Doppler lidars at some sites measure vertical drafts at the cloud base.