

The objective of the project EUSAAR is the integration of measurements of atmospheric aerosol properties performed in a distributed network of 20 high quality European ground-based stations (Supersites).

Although particulate matter has become a priority under the Convention in relation to the envisaged review and possible revision of the Gothenburg Protocol, it is only measured at comparably few regional background stations. The present situation is, therefore, clearly not sufficient in the context of an integrated atmospheric observing system for air quality and climate studies. Because these measurements are performed outside of coordinated protocols, access to this information is, at present, rather uneasy and not provided in a coherent manner. EUSAAR is particularly focussing on the following key parameters for which a clear lack of coordination exists: aerosol chemical properties (inorganic/organic composition), aerosol physical properties (size distribution, mass), aerosol optical properties (light scattering/absorption coefficient, optical depth) and aerosol 3D-distribution (vertical profile). These parameters are the basic information required to detect any long-term change in aerosol source emissions and assess possible climatic effects of aerosols that may result from these changes.

The major goal of EUSAAR, through its 6 Networking Activities, is to provide easy access to high quality data bases and promote standardised measurement protocols, intercomparability of observations and quality assurance common to all research sites for the aerosol parameters listed above.

The networking activities will be complemented by 3 Joint Research Activities aimed at developing future tools for aerosol monitoring and dissemination of information. These developments can only be achieved through transnational coordinated research projects sharing experience, know-how and human capital, as offered by the proposed infrastructure. Each one of the JRAs will support and improve the implementation of one or more of the networking activities.

The objectives of the Trans-National Access Activities are to promote scientific excellence ("mobility of experts") and access of research scientists, in particular inexperienced users, to the high quality EUSAAR infrastructures (Supersites).

European Supersites for Atmospheric Aerosol Research



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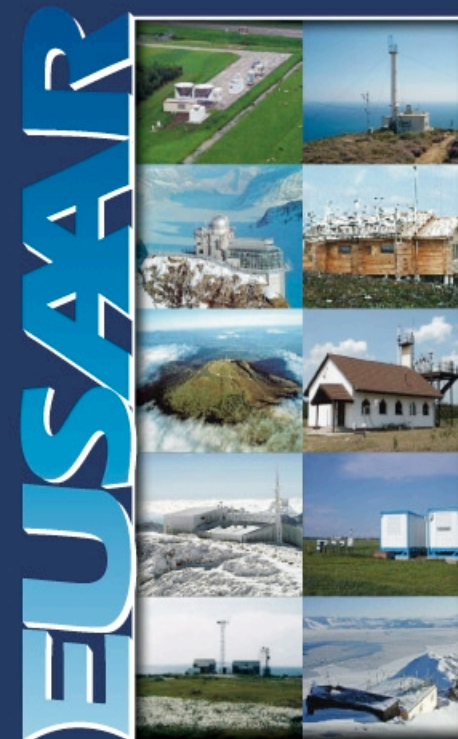
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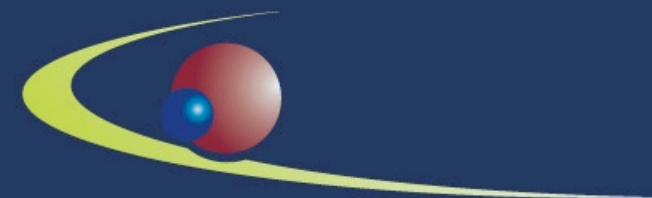
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EUSAAR Summary

EUSAAR is an EU-funded I3 (Integrated Infrastructures Initiatives) project carried out in the framework of the specific research and technological development programme "Structuring the European Research Area - Support for Research Infrastructures". The objective of the project EUSAAR is the integration of measurements of atmospheric aerosol properties performed in a distributed network of 20 high quality European ground-based stations. This integration contributes to a sustainable and reliable operational service in support of policy issues on air quality, long-range transport of pollutants and climate change. The project is coordinated by CNRS in Clermont-Ferrand, France, and activity leaders are world-recognized experts in the field of aerosol research.

The lack of coordination programs for non-regulated measurements of aerosol properties is considered a major gap in Earth Observation that urgently needs to be filled.

The objective of the networking activities is to ensure most efficient use of available resources by:

- 1) harmonization and validation of current measurement of particle optical, physical and chemical properties performed at Supersites as these are critical to ensure their scientific value;

- 2) centralization of the validated measurements in a common data base accessible to all users;
- 3) spreading good practices and disseminate information on new protocols both within and outside the project.

Trans-National Access is offered to 11 research Supersites. The infrastructures were identified based on the high level of implemented instrumentation for the study of atmospheric aerosols (chemical, physical and optical properties) and on their atmospheric probing capacity in an identified environment. In addition, these supersites are located in specific locations in Europe that are representative of a specific climate or ecosystems of interest to atmospheric scientists.

The joint research activities have the common objectives to develop affordable and sustainable solutions to improve monitoring strategies and products that will advance up-to-date data reporting across Europe. This concerns retrieval of the aerosol column with a novel technology, development of a new generation of humidity-controlled instruments and new methodologies for real-time acquisition of aerosol parameters.

A major concern of EUSAAR is that activities consolidate current observation efforts and ensure their continuation beyond the present project.

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