

# **AERIS: data and services for Atmosphere**

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## **ABSTRACT**

The AERIS atmosphere Data Centre (<https://www.aeris-data.fr>), part of the French Data Terra Research Infrastructure (<https://www.data-terra.org>), has the objective to facilitate and enhance the use of atmospheric data, whether from satellite, aircraft, balloon, or ground observations, or from laboratory experiments. It generates advanced products and provides services to facilitate data use, to prepare campaigns, and to interface with modelling activities. It consists of four Data and Service Centres (DSC) with strong expertise in data curation, storage, preservation and dissemination: ICARE (Lille), ESPRI (Paris), SATMOS (Lannion) and SEDOO (Toulouse). AERIS has close relationships with different laboratories for transferring prototype products and expertise on data. Most of these data centres are involved in European initiatives and projects promoting the FAIR data principles and participating in the European Open Science Cloud (EOSC). AERIS hosts and manages data from many European projects and Research Infrastructures (ACTRIS, IAGOS, HEMERA...) and is involved in several satellite missions (IASI, CALIPSO, Megha-Tropiques, MicroCarb...).

The objective of AERIS is to assist research requiring access to atmosphere data. To meet this need, AERIS provides a continuous open call for projects that enables the atmospheric science community to express its data management needs. Through a dedicated data access portal, AERIS gives access to a large panel of atmospheric data:

- ground-based data from observation infrastructures or networks (ACTRIS, NDACC...)
- satellite products (atmospheric composition, aerosol properties, clouds characterization...)
- airborne data (balloons, aircrafts)
- reference databases (GEISA spectroscopy database, ECCAD emission inventories database...),
- tools and services (colocation of satellite data with ground-based data, support to campaigns, web site hosting...).

AERIS has implemented a data catalogue in order to make all the AERIS datasets discoverable and accessible. For this purpose, all the metadata describing the datasets are the most complete as possible and made compliant with standard formats and protocols. To allow interoperability with other data portals, standard services are being implemented and a vocabulary linked to the ones used in the French and International Environmental Community has been setup. In the next years an emphasis will be made to the use of semantics in order to improve the data discovery and advanced services such as online data comparison and processing.

This general presentation of AERIS will be completed by a poster dedicated to the activity on IASI products.

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