

CAMAERA: Copernicus Atmosphere Monitoring Service AERosol Advancement CAMAERA

Description

The European Union's flagship Space programme Copernicus provides a key service to the European society, turning investments in space-infrastructure into high-quality information products.

The Copernicus Atmosphere Monitoring Service (CAMS, <https://atmosphere.copernicus.eu>) exploits the information content of Earth-Observation data to monitor the composition of the atmosphere. By combining satellite observations with numerical modelling by means of data assimilation and inversion techniques, CAMS provides in near-real time a wealth of information to answer questions related to air quality, climate change and air pollution and its mitigation, energy, agriculture, etc. CAMS provides both global atmospheric composition products, using the Integrated Forecasting System (IFS) of ECMWF - hereafter denoted the global production system - , and regional European products, provided by an ensemble of eleven regional models - the regional production system.

The CAMS AERosol Advancement (CAMAERA) project will provide strong improvements of the aerosol modelling capabilities of the regional and global systems, on the assimilation of new sources of data, and on a better representation of secondary aerosols and their precursor gases. In this way CAMAERA will enhance the quality of key products of the CAMS service and therefore help CAMS to better respond to user needs such as air pollutant monitoring, along with the fulfilment of sustainable development goals. To achieve this purpose CAMAERA will develop new prototype service elements of CAMS, beyond the current state-of-art. It will do so in very close collaboration with the CAMS service providers, as well as other tier-3 projects. In particular CAMAERA will complement research topics addressed in CAMEO, which focuses on the preparation for novel satellite data, improvements of the data assimilation and inversion capabilities of the CAMS production system, and the provision of uncertainty information of CAMS products.

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Source URL (retrieved on 24 nov 2024 - 10:27): <https://www.bsc.es/ca/research-and-development/projects/camaera-copernicus-atmosphere-monitoring-service-aerosol>