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Type: **Demonstration**

ENES Data Space: an EOSC-enabled Data Space Environment for Climate Science

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The scientific discovery process has been deeply influenced by the data deluge started at the beginning of this century. This has caused a profound transformation in several scientific domains which are now moving towards much more open and collaborative approaches.

In the context of the European Open Science Cloud (EOSC) initiative launched by the European Commission (EC), the ENES Data Space represents a domain-specific implementation of the data space concept, a digital ecosystem supporting the climate community towards a more sustainable, effective, and FAIR use of data. More in detail, the ENES Data Space aims to provide scientists with an open, scalable and cloud-enabled science gateway for climate data analysis on top of the EGI Federated Cloud infrastructure. The service, developed in the context of the EGI-ACE EU project, provides ready-to-use compute resources and datasets, as well as a rich ecosystem of open source Python modules and community-based tools (e.g., CDO, NCO, Xarray, Dask, PyOphidia, Cartopy, Matplotlib, etc.), all made available through the user-friendly JupyterLab interface. In particular, the ENES Data Space provides access to a multi-terabyte set of specific variable-centric collections from large-scale global experiments to support researchers in realistic climate model analysis experiments. The data pool consists of a mirrored subset of the CMIP (Coupled Model Intercomparison Project) climate model datasets from the ESGF (Earth System Grid Federation) federated archive. Results and output products as well as experiment definitions (in the form of Jupyter Notebooks) can be easily shared among users through data sharing services integrated in the infrastructure.

This demonstration will showcase how scientific users can benefit from the ENES Data Space and practically exploit its main features and capabilities for research purposes.

Any relevant links

<https://enesdataspace.vm.fedcloud.eu>

Topic

Data Spaces

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