SPACIOUS

Science PlAtform Cloud Infrastructure
for Outsize Usage Scenarios

Cloud based **Data Mining** platform for advanced analysis

Simplified **Big Data** access

Boost **scientific exploitation** of ESA missions

Collaborative astrophysical research

BREAKING BARRIERS IN BIG DATA ANALYSIS

SPACIOUS addresses the growing need for **handling** and **analysing** vast datasets from **ESA missions** such as Gaia and Euclid.

SPACIOUS provides a novel computational **platform** designed to boost the scientific **exploitation** of ESA mission data through advanced **Big Data** and **Data Mining** technologies.

By **integrating** existing **technologies** into a unified **cloud-based** environment, SPACIOUS lowers technical barriers, enabling the scientific community with streamlined access to state-of-the-art Big Data and Data Mining methodologies, and the capability of deeper large-scale analysis of ESA mission data beyond current limits.

openstack · kubernetes · APACHE Spark · VOLCANO Kubernetes Native Batch System · docker · HARBOR · jupyter · argo · dask

COMMUNITY

SPACIOUS will be made available to the community through several channels:

- **BSC:** Through open calls for research proposals based on scientific and technical merit.
- **Commercial clouds**: SPACIOUS can be deployed on cloud services hired by groups or organisations.
- **Your own facilities**: SPACIOUS can be installed and deployed at your infrastructure for more control.

LEGACY

High level data products generated from Gaia and Euclid data during the project will be made available to the community. These enhanced data products will be valuable for research, target definition of future missions and ground based follow-up.

STATE-OF-THE-ART FACILITIES

At the heart of SPACIOUS lies the Barcelona Supercomputing Center (BSC), one of the Europe's most advanced supercomputing facilities. BSC's capabilities in cloud computing, software development, and data management provide the technological backbone of the project.

SPACIOUS is built to be deployable on commercial cloud services as well.

BEYOND ACADEMIA

SPACIOUS values public engagement, actively sharing results with the educational sector, industry, and the public.

Educational activities introduce students to Big Data and cloud computing, making cutting-edge technology accessible to learners of all ages.

The SPACIOUS Citizen Science platform enables researchers to launch projects while citizens contribute compute time.

PARTNERS

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