

Title: XMM-Newton in Datalabs

Abstract:

The XMM-Newton satellite is one of the most successful missions ever built for ESA. It has been operating as an open X-ray observatory since the beginning of 2000, producing high quality scientific results since then.

The XMM-Newton Science Analysis Software (SAS) is the application used for processing the data obtained with the scientific instruments on board XMM-Newton, an indispensable tool that has been helping scientists in the publication of nearly all refereed scientific papers published up to date. SAS is a robust software that has allowed users to produce good scientific results since the beginning of the mission. This has been possible given the SAS capability to evolve from a stand-alone to a SaaS (Software as a Service) application and adapt to the needs of the scientific community.

The SaaS version of SAS is called RISA (Remote Interface for Science Analysis). It is offered to the scientific community through the XMM-Newton Science Archive (XSA) interface. The RISA web service is currently used by approximately 100 external users, submitting around 1200 request per year.

The XMM-Newton project is currently working in the adaptation of the SAS application to the new Datalabs infrastructure. Two initial Datalabs have been created and one more will come in the following months:

- A Jupyter notebook SAS Datalab, where we will offer to the community the data processing threads.
- A SAS Datalab where the full SAS capabilities will be offered to the community.
- Adaptation of RISA infrastructure to Datalab.

We are also working in new SAS-Python functionalities that will be soon available in the Datalab ecosystem.