Contribution ID: **12** Type: **Presentazione orale**

From AMS to HERD: status and exploration of CLOUD solutions for cosmic ray data analysis

Monday, 23 May 2022 15:20 (20 minutes)

The computing model of the AMS-02 experiment was designed to cope with several TB of ROOT files produced every year of the mission. It requires periodical reprocessing of the full dataset and, throughout the year, massive MonteCarlo productions of the various CR species. Data analysis is often performed on a reduced set of data which is handled by the end-users directly (both in terms of production and usage). Both the data production and the data analysis for the AMS-02 experiment are run in the ~5 computing centers of the collaboration without any grid-like framework, but instead relying on the locally-provided batch systems.
This is what prompted our efforts in the last years exploiting technical solutions provided by the "Dynamic On Demand Analysis Service" (DODAS) developed in the context of projects such as INDIGO-DataCloud, EOSC-hub, and XDC in order to seamlessly access cloud resources both commercial (Deutsche Telekom, Google-Cloud) and on premises (Cloud@ReCas, and Cloud@CNAF). A concrete examples of this is the successful initiative to include AMS-02 compute resources hosted at ASI.
Building on the experience gathered so far dealing with the AMS-02 computing model, the design of the HERD experiment computing model started by trying to leverage as much as possible the INFN-Cloud infrastructure to deploy common services to the whole collaboration (IAM, calendar&document server, experiment website and internal documentation, dedicated gitlab instance, ...), to expand and test the integration of a DODAS-provided cluster with the resources available at CNAF, and to explore new solutions for data storage and handling.
The status of these activities will be shown including the experience and perspectives of the experiments both on computing and data handling.

Primary author: FORMATO, Valerio (RM2)

Co-authors: DURANTI, Matteo (Istituto Nazionale di Fisica Nucleare); MORI, Nicola (INFN Firenze)

Presenter: FORMATO, Valerio (RM2)

Session Classification: Esperimenti e calcolo teorico

Track Classification: Calcolo negli esperimenti