



Contribution ID: 533 Contribution code: **contribution ID 533**

Type: **Poster**

Data and Analysis Preservation in the PHENIX Experiment at RHIC

In the past decade, Data and Analysis Preservation (DAP) has gained an increased prominence in the scope of effort of major High Energy and Nuclear Physics (HEP/NP) experiments, driven by the policies of the funding agencies as well as realization of the benefits brought by DAP to the science output of many projects in the field. It is a complex domain which in addition to archival of various tiers of data produced by the experiments also includes long-term knowledge management as well as preservation of relevant software and infrastructure elements in an organized and functional state. In this presentation, we are sharing the experience, technology choices and status of the effort of the PHENIX Collaboration in this area for the first time.

The PHENIX Collaboration has recently undertaken an effort to put in place Data and Analysis Preservation procedures and practices including

- Use of Docker containers to preserve specialized and/or legacy computing environments and enhance software portability
- Exploratory use of REANA as a mechanism to capture the final stages of select analyses for preservation, validation and training
- Active supervision and management of the materials created and submitted by the Collaboration to the CERN HEPData portal (Level 1 in standard DAP nomenclature), with a broad team involvement
- Joining the CERN OpenData portal and using that platform to host self-contained packages which include PHENIX special purpose limited datasets and basic examples of analysis software (Level 2 in standard DAP nomenclature)
- A vigorous team effort to migrate PHENIX research materials from legacy information systems approaching end-of-life to a robust and well maintained digital repository, opting to use the Zenodo instance at CERN
- Deployment of a new Collaboration website for easy access to curated materials including those obtained from legacy resources, optimized for long-term stability and ease of maintenance

Common across all these work areas is the strategy of using community-developed and supported tools, frameworks and services while keeping in-house development to the absolute minimum. In summary, this presentation covers

- a real-life experience of a major experiment implementing a variety of DAP measures against the background of legacy software and documentation systems

- an exposition of a variety of platforms and tools employed in PHENIX DAP which can be used as a guidance in other HEP/NP projects

Author: POTEKHIN, Maxim (Brookhaven National Laboratory (US))

Presenter: POTEKHIN, Maxim (Brookhaven National Laboratory (US))

Session Classification: Posters: Apple

Track Classification: Track 1: Computing Technology for Physics Research