Mu3e data preservation and access policy

The Mu3e Collaboration

The data collected by the Mu3e experiment will provide a unique opportunity to study muon decays and related processes well beyond the Mu3e data taking phase. The Mu3e collaboration is committed to fully exploit the physics potential of these data by ensuring their long-term accessibility to both members of the collaboration and the wider scientific community.

Mu3e data ranges from the raw output of the detector and simulation programs via reconstructed physics objects to the data representations in physics publications. We endeavor to make Mu3e physics publications open access both via the respective journal and via the arXiv open access preprint repository (contingent on journal policies). The high-level data presented in the publications such as cross-sections, branching fraction limits etc. will be preserved in both graphical and numeric form using community platforms such as INSPIRE[1] and HEPData[2].

The raw data from the detector and simulation programs and the corresponding metadata will be preserved for at least 10 years after completion of data taking by the *PetaByte-Archive* operated by PSI data center in collaboration with the Centro Svizzero del Calcolo Scientifico (CSCS). Ownership and access control to the data remains with the collaboration. The software and calibration constants to obtain reconstructed physics objects from the raw data will be preserved using a distributed version control system. In addition, the complete software environment used for physics publications will be conserved using *virtual machines* or equivalent technology in order to ensure computational reproducibility. The Mu3e collaboration does not intend to release the raw data, as they are not directly useful for analysis and their sheer volume prevents efficient sharing; the lowest level of processed data that could potentially be useful for researchers outside the Mu3e collaboration will be made publicly available within three years of the completion of the Mu3e measurement program.

Physics analysis in Mu3e will be mainly based on reconstructed objects such as particle tracks and vertices. The Mu3e software versioning policy will ensure a consistent reconstruction of these objects. Long-term preservation will also be ensured by the *PetaByte-Archive*. After exploitation by the collaboration, these high-level data, associated metadata and software required for their analysis will be made publicly available under a Creative Commons CC0[3] waiver, which allows for the widest possible re-use of the data whilst protecting the liability and reputation of the collaboration. It is expected that third parties using the data cite the Mu3e collaboration as the original data author.

[1] http://inspirehep.net
[2] https://hepdata.net/
[3] https://creativecommons.org/publicdomain/zero/1.0/

The Mu3e institutes board is responsible for approving, upholding and if necessary amending this data preservation and access policy. The institutes board appoints a data management officer who is responsible for the implementation of the policy and the data releases.

Adopted by the Mu3e Collaboration, September 19^{h}, 2018.