

# The ATLAS Conditions Database Architecture for the Muon Spectrometer

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The ATLAS Muon Spectrometer is the outer part of the ATLAS detector at LHC. It has been designed to detect charged particles exiting the barrel and end-cap calorimeters and to measure their momentum in the pseudorapidity range  $|\eta| < 2.7$ . The challenge performance in momentum measurements needs an accurate monitoring of detector and calibration parameters and an high complex architecture to store them.

The ATLAS Muon System has extensively started to use the Condition Database to store all the conditions data needed for the reconstruction of the events.

The LCG conditions database project 'COOL' as the basis for all its conditions data storage both at CERN and throughout the worldwide collaboration as decided by the ATLAS Collaboration. The management of the Muon COOL conditions database will be one of the most challenging applications for Muon System, both in terms of data volumes and rates, but also in terms of the variety of data stored. The Muon Conditions database is responsible for almost of all the 'non-event' data and detector quality flags storage needed for debugging of the detector operations and for performing reconstruction and analysis. COOL implements an interval of validity database, i.e. objects stored or referenced in COOL have an associated start and end time between which they are valid, the data is stored in folders, which are themselves arranged in a hierarchical structure of foldersets. The structure is simple and mainly optimised to store and retrieve object(s) associated to a particular time. In this work, an overview of the entire Muon Conditions Database architecture is given, including the different sources of the data and the storage model used, in addition, the software interfaces are also described.

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