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The ATLAS Conditions Database Model for the Muon Spectrometer

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The ATLAS Muon System has extensively started to use the LCG conditions database project 'COOL' as the basis for all its conditions data storage both at CERN and throughout the worlwide 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. The COOL database allows database applications to be written independently of the underlying database technology and ensures long-term compatibility with entire ATLAS Software. 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 optimsed 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 addiction the software interfaces used to access to the Conditions Data are described, more emphasis is given to the Offline Reconstruction framework ATHENA and the services developed to provide the Conditions data to the reconstruction.

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