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Software Solutions for a Variable ATLAS Detector Description

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This talk addresses two issues related to the implementation of a variable software description of the ATLAS detector. The first topic is how we implement an evolving description of an evolving ATLAS detector, including special configurations at varying levels of realism, in a way which plugs into the simulation and reconstruction software. The second topic is how time-dependent alignment information is incorporated into the detector model. Both types of functionality use dedicated databases. The primary source of information for the detector configuration is a relational database using a hierarchical versioning system. The primary source of alignment information is the ATLAS conditions database, which is organized primarily by validity interval and is accessed by various ATLAS applications through COOL API. The two types of information are merged seamlessly into a single, time-dependent transient detector store.

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