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Transparently managing time varying conditions and detector data on ATLAS.

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It is essential to provide users transparent access to time varying data, such as detector misalignments, calibration parameters and the like. This data should be automatically updated, without user intervention, whenever it changes. Furthermore, the user should be able to be notified whenever a particular datum is updated, so as to perform actions such as re-caching of compound results, or performing computationally intensive task only when necessary. The user should only have to select a particular calibration scheme or time interval, without having to worry about explicitly updating data on an event by event basis. In order to minimize database activity, it is important that the system only manage the parameters that are actively used in a particular job, making updates only on demand. For certain situations however, such as testbeam environments, pre-caching of data is essential, so the system must also be able to pre-load all relevant data at the start of a run, and avoid further updates to the data.

In this talk we present the scheme for managing time varying data and their associated intervals of validity, as used in the Athena framework on ATLAS, which features automatic updating of conditions data occurring invisibly to the user; automatic and explicit registration of objects of interest; callback function hierarchies; and abstract conditions database interfaces.

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