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Rich Event Model

Introduction

The RICH event model has contains two different types of classes, those that are made persistent and stored in the data files (sim, digi, dst etc.) and those that are private to a given application package. As of LHCb v18r3, all persistent classes are defined in the package Event/RichEvent (see [CVS](#) for current details).

Mainstream XML Event Model Classes

The mainstream classes in the RICH event model, which are defined using the G.O.D. XML description and are made persistent during normal processing are :-

- MCRichHit
- MCRichDigi
- RichPID

Additional XML Event Model Classes

The following classes are also defined using the G.O.D. XML description, but are not made persistent during normal productions.

Rich Digitisation Object

The class RichDigi is a single object representation of a single RICH detector channel. These objects are no longer created or stored during normal productions, since the reconstruction works directly from the decoded RawBuffer.

Monte Carlo Extension Data Objects

The following are additional MC objects, that can be produced and stored during Gauss processing but are not needed for normal processing and thus by default are not activated. They contained detailed additional information useful for RICH software development or debugging.

- MCRichSegment
- MCRichTrack
- MCRichOpticalPhoton

Non-XML Classes

The Rich Event package also contains some classes which are not (at least as yet) written using the G.O.D. XML description, since they are not made persistent. They are provided as convenient representations of common concepts in the RICH software.

- RichGeomPhoton
- RichTrackSegment

Private Application Data Objects

The private data objects are used to aid the algorithms in their processing and are generally not designed to be

made persistent. These classes are not included in Event/RichEvent in order to keep the library streamlined, but are defined locally by the applications that use them. Examples are the MCRichDeposit and MCRichSummedDeposit classes in the Rich/RichReadout package or the RichRecEvent objects in the Rich/RichRecBase package.

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