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The LHCb Event Model

The LHCb Event Model describes the event data classes and their relationships.

Developing new Event Model classes

- All event model classes must be described in XML which is then parsed by the Gaudi Object Description package to produce C++ header files and the dictionaries required for persistency. More information is given in the Tutorial.
- Each event model class must have a unique ClassID. Look at the list of existing Class IDs, choose a new one in the appropriate range and update the list.
- Code should follow the conventions described in LHCb-2001-142.
- See also this presentation covering KeyedContainer, KeyedObject and association to MC truth.

Documentation of Event Model classes

The event model classes are released as part of the LHCbSys project. Please refer to the latest LHCbSys doxygen web and release notes for up to date code documentation. The links below are to other sources of documentation.

- Persistent base classes - Container classes and base classes for data objects.
- Channel ID classes: LHCbID
- Physics Event Model
  - See also:
    - Monte Carlo Event Type Definition Rules LHCb-2005-034
    - Particle to MC truth matching
- Track Model - see also LHCb-2006-007
- Calo Event Model
- L0 Event Model
- OT Event Model
- Rich Event Model
- ST Event Model (STChannelID, STCluster, STLiteCluster, STSummary): see LHCb-2008-047
- Velo Event Model: LHCb-2006-054
- VP Event Model: LHCb-PUB-2013-018
- Classes to build external relationships between classes:
  - Linkers (LHCb-2006-008)
  - Relations (LHCb-2005-005)

See also:

- The current event model structure and its limitations - talk by F.Dordei at the 6th LHCb Computing Workshop, 2015-11-16
- Event Model Review - comprehensive review that took place in 2005
- Minutes of design meetings in 2001/2002
- Event Data Model Conventions - Draft from 2000

Persistent data sets

- RawEvent, RawBank types and formats
- MicroDST
- rDST (obsolete)
Decoders and Raw Event locations, accessing and manipulating the raw event:

- RawEventJuggler, the framework for storing and accessing multiple raw events.

-- MarcoCattaneo - 22 Sep 2008