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Offline Software

TOTEM offline software is based on the CMSSW framework.

Documentation for the CMSSW framework

- Getting started CMSSW 7.0.4 version - instructions where to find code and how to run it. With examples!
- Getting started CTPPS offline sw (based on CMSSW 7.5.0)
- Getting started (deprecated CMSSW 6.2.0 version) - unstable, obsolete, use with care.
- Getting started (deprecated CMSSW 4.2.4 version) - stable, dedicated to RunI, works only on SLC5.
- HOWTO - set of instruction how to deal with TOTEM software, might be useful for beginners.
- Backup of certain CMSSW TWiki pages
- The CMS Offline WorkBook, especially:
  ♦ Setting up your Computing Environment
  ♦ CMS Computing Concepts: Programming, CVS, etc (CVS configuration)
  ♦ CMSSW Application Framework
  ♦ Introduction to CMS Configuration Files
  ♦ Skeleton Code Generator
- Framework and Event Data Model Offline Guide - good HOWTO with lots of links
- Guidelines for the Use of Pointers in CMS Software
- How to compile entire framework against a different version of ROOT
- How to change compiler and linker flags
- QtRoot installation (highly recommended for TotemDQM)
- LXR - tool to browse and search in CMSSW code

Documentation for TOTEM modules

- Doxygen documentation
- History of changes
- RP simulation and reconstruction chain
- Totem Database Software - tools and modules for data access, see also Database infrastructure
- Dead and noisy channels masking - Documentation of dead and noisy channels masking
- Elegent MC generator
- Raw data reader
- Roman Pot Alignment
- Event Visualization - FROG
- Geometry in CMSSW
- Roman Pot geometry and alignment

Ntuples

- Description of the TOTEM ntuple structure.
Coding style

• Conventions we use

Tools

• Indentation of the code and configuration files
• TOTCSI User Guide
• TOTCSI Developer Guide
• Using valgrind for segfault errors debugging
• Customizing external CMSSW libraries (like Geant4)
• Local installation of CMSSW framework
• Timing performance of CMSSW modules - HOWTO
• Totem command line parser
• Root File Checker

Miscellaneous

• PhD thesis by Hubert Niewiadomski
• PhD thesis by Jan Kašpar (chapter 3 on RP software, chapter 4 on RP alignment)
• List of Monte Carlo productions
• PYTHIA 8 MC generator
• Sherpa MC generator

Migration notes

Migration 620 -> 704 related

• Migration from CMSSW 6_2_0 to 7_0_4

Migration 424 -> 620 related

• Migration from CMSSW 4_2_4 to 6_2_0

Migration 311 -> 424 related

• Migration from CMSSW 3_1_1 to 4_2_4

Migration 177 -> 311 related

• Migration to newer version of CMSSW framework - general comments
• Getting started (deprecated CMSSW 1.7.7 version) - instructions where to find code and how to run it. With examples!
• Migration from CMSSW 1_7_7 to 3_1_1