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Running Fast Simulation within IGUANA and visualize events on the fly

Complete: 

Introduction

The IGUANA event display is a powerful tool which allows to visualize a lot of information about an event, with detailed views of the detector, generated particles, sim hits, digitized hits, and reconstructed quantities including hits, clusters, segments and tracks. It can even be used to visualize the magnetic field. This can be really useful to learn about properties of the detector, but also to understand and debug reconstruction algorithms.

A comprehensive description of IGUANA is given here in the Offline WorkBook. On this page you can find examples of how to use Iguana with Fast Simulation.

Instructions

CMSSW_2_1_9

You will need the appropriate visualization tags:

```
cvs co -r V02-09-01 VisReco/VisTracker
cvs co -r V02-05-01 VisReco/VisDetector
cvs co -r V02-10-01 VisReco/VisMuon
cvs co -r V02-03-10 VisReco/CustomTracker
cvs co -r V02-12-01 VisReco/VisHcal
cvs co -r V02-10-00 VisReco/VisEcal
cvs co -r V02-12-01 VisReco/VisRecoJets
cvs co -r V02-09-01 VisFramework/VisEventSetup
cvs co -r V03-01-01 VisFramework/VisFrameworkBase
cvs co -r V02-07-00 VisSimulation/VisSimHits
```

Note: these may already be in the CMSSW_2_1_9 release by the time you try this.

Fast Simulation examples can be found in

```
FastSimulation/Configuration/test
```

To run Fast Simulation with Iguana, the prescription is basically to replace (i.e. comment out) lines in your configuration that contain

```
cms.OutputModule
```

and

```
cms.Endpath
```

and add

```
process.load("Configuration.StandardSequences.FakeConditions_cff")
process.load("VisFramework.VisFrameworkBase.VisConfigurationService_cff")
```

(in the simplest case).

To provide a specific (and slightly more involved) example, in Example_cfg.py replace

```
process.o1 = cms.OutputModule("PoolOutputModule", fileName = cms.untracked.string("MyFirstFamosFil
outputCommands = cms.untracked.vstring("keep
process.outputPath = cms.EndPath(process.o1)
```

with

```
process.load("Configuration.StandardSequences.FakeConditions_cff")
process.load("CMS.RecoLocalTracker.SiPixelRecHits.PixelCPEGeneric_cfi")
process.load("VisFramework.VisFrameworkBase.VisConfigurationService_cff")

process.VisConfigurationService.ContentProxies = cms.untracked.vstring('Framework/EventSetup',
                                                                    'Reco/Ecal',
                                                                    'Reco/Hcal',
                                                                    'Reco/Tracker',
                                                                    'Reco/Calorimetry',
                                                                    'Simulation/Hits')
```

Note: If you omit specifying the ContentProxies in the configuration file by default all of them will be included (likely adversely affecting performance).

and then run:

```
> iguana Example_cfg.py
```

From the **Event** menu open select **Next Event** and start browsing.

Note: In "normal" running conditions (i.e. reading already-generated data files) Ctrl-N will step you one event forward and Ctrl-P one event backward. In this case Ctrl-N will step forward in the sense that a new event will be generated. Ctrl-P works as well but strictly speaking you will not be stepping back to the previous event but re-simulating a new event.

CMSSW_2_0_0

Try the recipe found here.

Review status

Reviewer/Editor and Date (copy from screen)	Comments
PatrickJanot - 14 November 2007	Created template page
ThomasMcCauley - 26 September 2008	Updated

Responsible: PatrickJanot

Last reviewed by: Reviewer

This topic: CMSPublic > SWGuideFastSimIGUANA

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