

MC Validation

Antonio Sidoti
for the LPNHE, Paris Group

MC Simulation meeting
18 Nov 2004

Introduction

One part of the LPNHE proposal to join CDF is MC Validation

MCValidation is what we would like to discuss today

MC validation will be done when MC releases have to be frozen (activity in spikes)

Anyhow, main LPNHE effort will be MC production

Goal

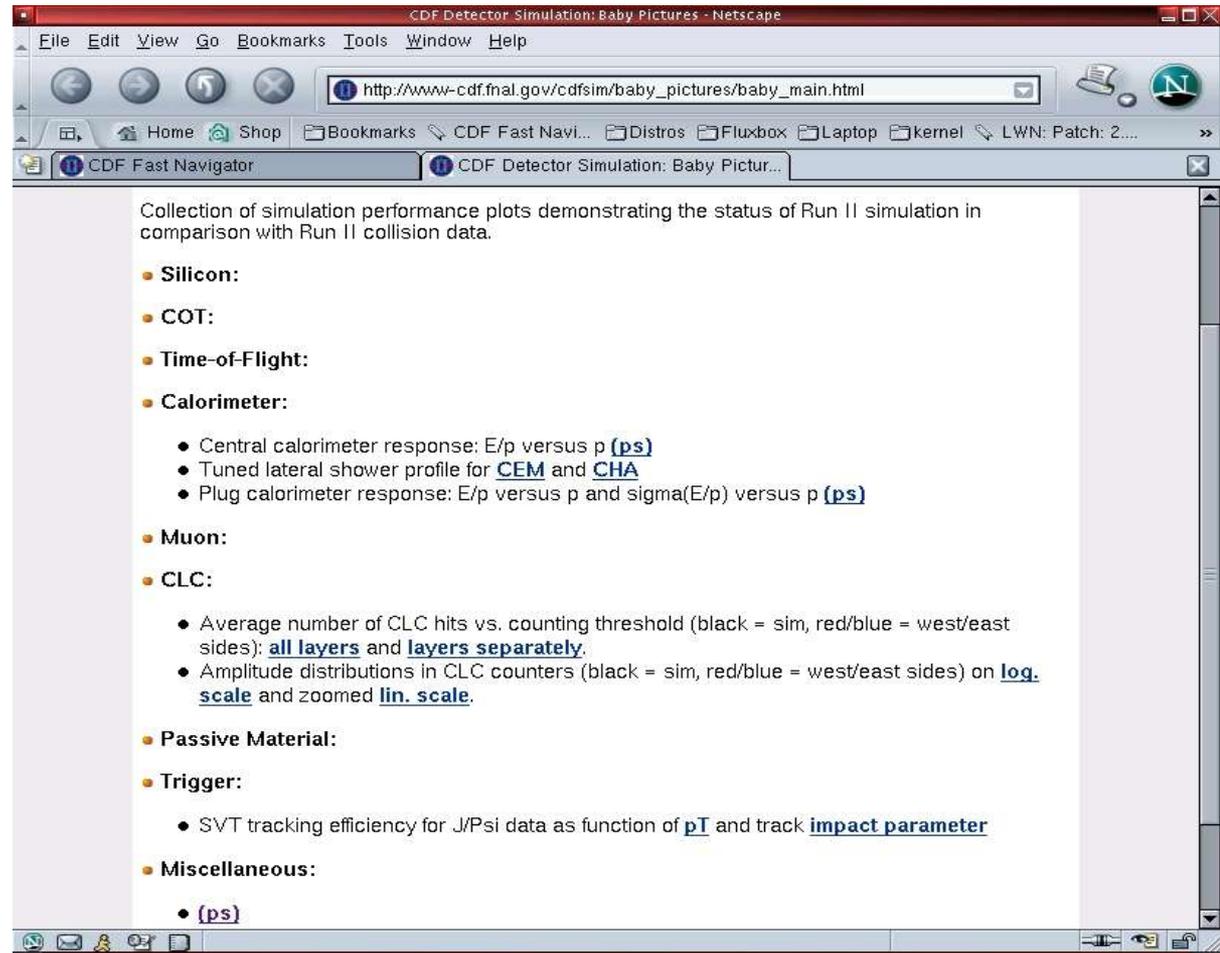
- Validate largest spectrum of physics processes.
- Validate MC pre-release, just before it will be frozen, and just after
- As a pre-release validation check will not replace physics analysis checks and tuning
- Goal is:
Replace man power during pre-release MC validation. (e.g. people might be busy doing other stuff instead of validating MC)
- “What are the kind of variables that in the next MC release you would like to check?”
- People would do that anyway so the goal is to relief them
- Spot bugs as soon as possible before millions of MC are generated and produced

What to validate?

- HEPG level validation
- Detector level quantities
- Reconstructed objects

Starting point:

- Physics groups: Ask physics conveners: “Which variables you would like us to check in the next MC pre-release?”
- CDF Simulation “baby picture” web page -> ask detector leaders



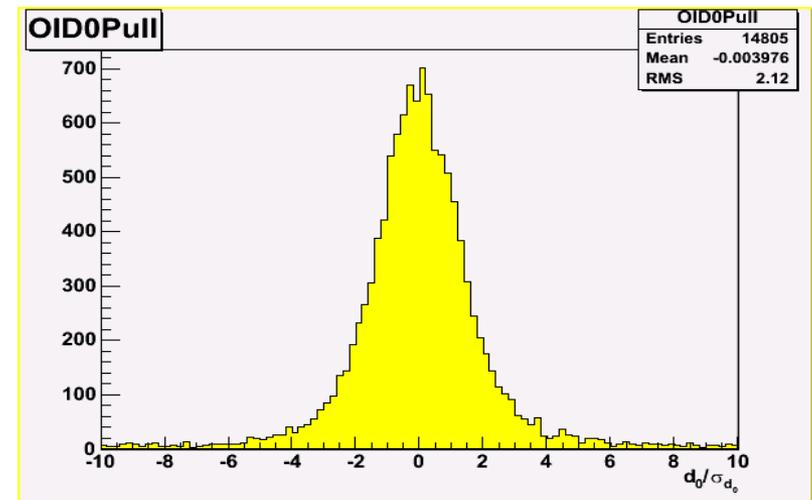
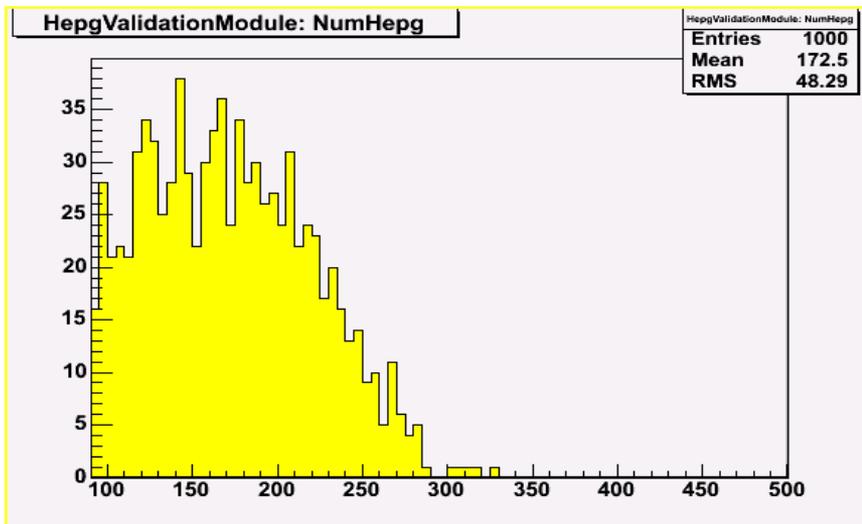
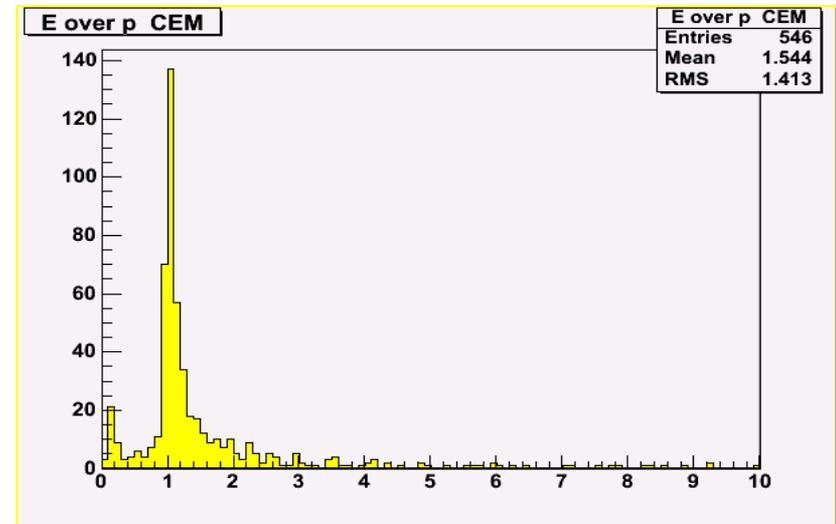
Strategy

- Produce MC according to Soon's SimulationMods/validation/validate_1k.sh (possibly add other processes and increase the number of events)
- Produce histograms at AC++ level i.e. without passing through “standard” ntuplizers (eg StnTuple, TopNtuple, ...)
- We have already one tool that we can quickly adapt: **DQMValidationModule** with all the submodules that actually do the job of producing histos
- A package has already been implemented MCValidationModule
- Extract histos for the various MC processes
- Compare with: known histos, previous release histos
- Report on web page

Working example on 5.3.3

Using wtop2i
book=cdfptop
(W->enu)

soon in cvs



Conclusion

Ask physics and detector groups plots of variables they would like to be checked for the next MC release

Finalize implementation of MCValidationModule

Run on 5.3.4 to get histos to be checked for next MC pre-release

Report on web page: histos, variables etc...

This is a job we will do intensively during MC releases
->activity will be concentrated in short periods

Probably more sanity check than validation...

Acknowledgements

Soon, Pasha, Ashutosh

A priori to the people that will help us defining the variables to be checked: Physics group conveners, Detector people, etc...
