



TF: New Requirements

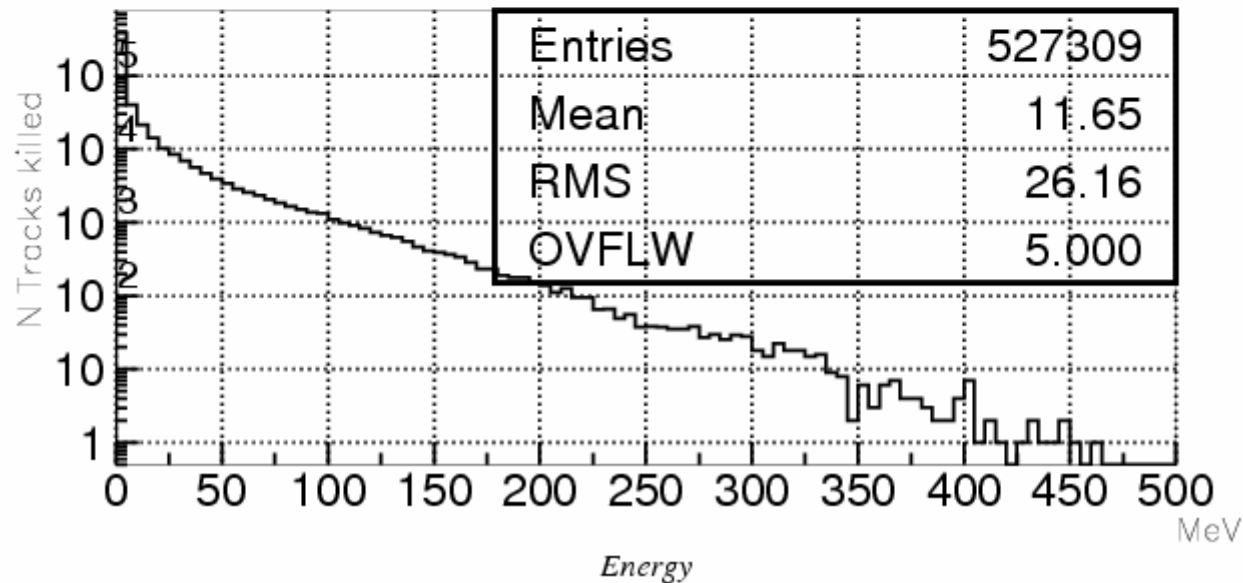
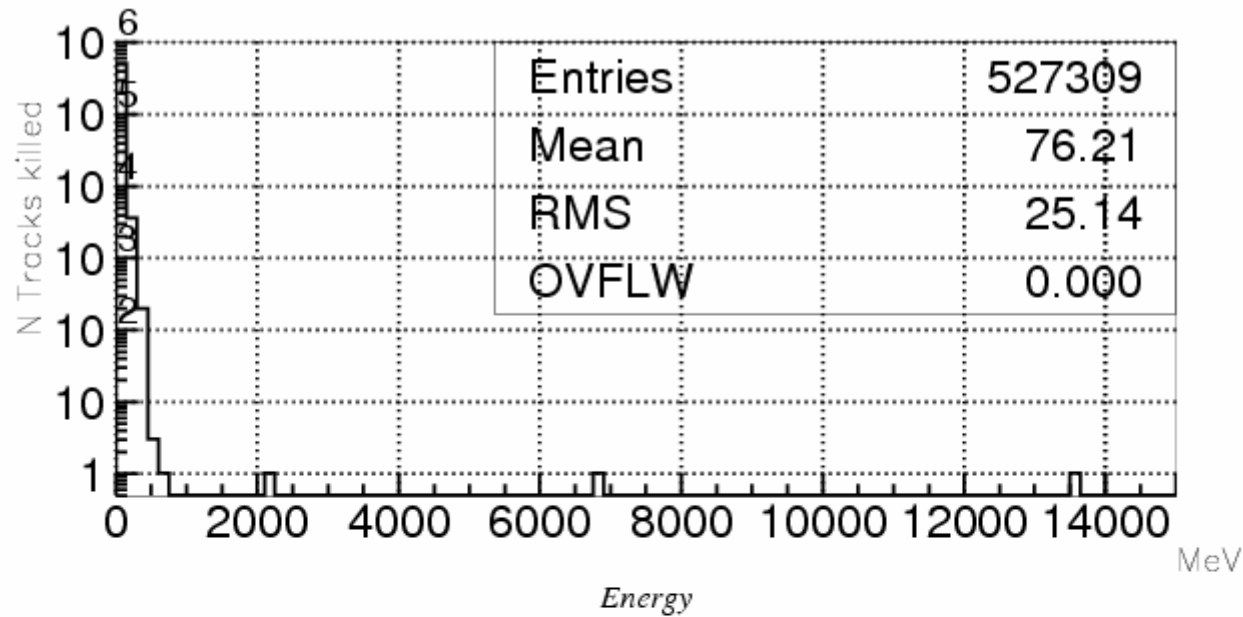
- Last TF ~6 weeks ago
⇒ Relative few new requirements (CMS/LHCb/BaBar/...)
- LHCb (G. Corti)
To help in debugging problems in the production environment we like to have detailed message when there is a problem.
This already occurs for the hadronic physics and we have found it very useful. It would nice to have similar detailed message from the other parts of Geant4.
Seconded by CMS



New Requirements

- **CMS:** Tracks killed by G4Transportation (P. Arce)
- G4Transportation kills a particle if during an step in magnetic field it has looped more than 1000 times without finding the boundary:
G4Transportation is killing track that is looping or stuck
This track has 13.928692 MeV energy.
- We have run 6750 minbias events through the CMS detector and found this to happen **68.1 times per event**
- Usually they are small particles, but a few times we found > 1 GeV (see plots)
 - Average energy lost is ~ 1 GeV / event
 - 3 particles with > 1 GeV (~ 2 GeV, 6.5 GeV, 13.7 GeV)
 - Needs study together with G4

Tracks killed by G4Transportation





New Requirements

- ⇒ Requirement from BaBar (D. Wright)
- here are currently only 4 processes which suspend particles:
 - G4Cerenkov
 - G4Scintillation
 - G4FastSimulationManagerProcess
 - G4HadronicProcess
 - For G4HadronicProcess, there is only one hadronic model (G4NeutronHPElastic) which invokes the suspension.
 - For BaBar applications, it would be very useful not to suspend the particle (at least in the hadronic processes). A more general solution would be to add a switch to the process that allows the user to turn off/on the suspension of the particle.



New Requirements

- 1) Access to a touchable from "Compute" methods in `G4VPVParameterisation` class
 - Position, material, etc., could be parameterized with copy numbers of not only itself but its mother

- 2) Touchable should be always attached for all secondaries
 - Currently, only EM processes set it.
 - Should it be done by individual physics processes, or taken care by `G4SteppingManager`?