Subject: Particle identification parameter for FairRutherfordPoint
Posted by Raphael Cervantes on Tue, 11 Dec 2012 22:45:10 GMT
View Forum Message <> Reply to Message

Hi guys,
I am currently using the rutherford example in Fairroot. I run run_rutherford.C and get test.mc.root. I would like to plot the particle hits on the detector as a function of theta for a particular particle, e.g. the theta distribution of photons. I plot these distributions with

root -l data/test.mc.root (in the rutherford macros folder)

cbmsim->Draw("FairRutherfordPoint.fEta>>h1","FairRutherfordPoint.fEta >-10 && FairRutherfordPoint.fEta<10")

where eta is the pseudorapidity and a function of theta.

I would like to just look at the eta distribution of the photons instead of the whole range of particles. I notice that the particle identification information is stored in MCTrack and not in FairRutherfordPoint. I thought of using the command
cbmsim->Draw("FairRutherfordPoint.fEta>>h1","FairRutherfordPoint.fEta >-10 && FairRutherfordPoint.fEta<10 && MCTrack.fPdgCode==22")
However, further analysis showed that this command does not actually plot the fairrutherfordpoint eta distribution of the photon particles. I believe is is because pdgCode is in a different branch from FairRutherfordPoint.

I now want to make pid information an intrinsic property of FairRutherfordPoint. What must I do to get the pdgCode from the MCTrack to the corresponding FairRutherfordPoint?

Subject: Re: Particle identification parameter for FairRutherfordPoint
Posted by StefanoSpataro on Wed, 12 Dec 2012 08:14:51 GMT
View Forum Message <> Reply to Message

cbmsim->Draw("FairRutherfordPoint.fEta>>h1","FairRutherfordPoint.fEta >-10 && FairRutherfordPoint.fEta<10 && MCTrack[FairRutherfordPoint.fTrackID].fPdgCode==22")

Subject: Re: Particle identification parameter for FairRutherfordPoint
Posted by Raphael Cervantes on Wed, 12 Dec 2012 11:25:50 GMT
View Forum Message <> Reply to Message

Hi,
That did the trick, but I don't quite understand what's going on. Can you explain to me why your code works?

Thank you,
Raphael

Subject: Re: Particle identification parameter for FairRutherfordPoint

Posted by StefanoSpataro on Wed, 12 Dec 2012 11:46:29 GMT
View Forum Message <> Reply to Message

You select the MCTrack corresponding to the track id from the Point. With the [XX] you retrieve the object at the XX position inside the TClonesArray, and the trackID is the position number inside the TCA of the mother MCTrack.