Subject: getting run_rutherford to calculate eta parameter [SOLVED]
Posted by Raphael Cervantes on Wed, 14 Nov 2012 20:18:02 GMT
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Hi all,
I would like to request help in modifying fairroot to give me information about eta=-log(tan(theta/2)), which is a very common parameter for understanding detector physics. Moreover, I think it should calculate eta by default, in the same way that it calculates phi and theta by default.

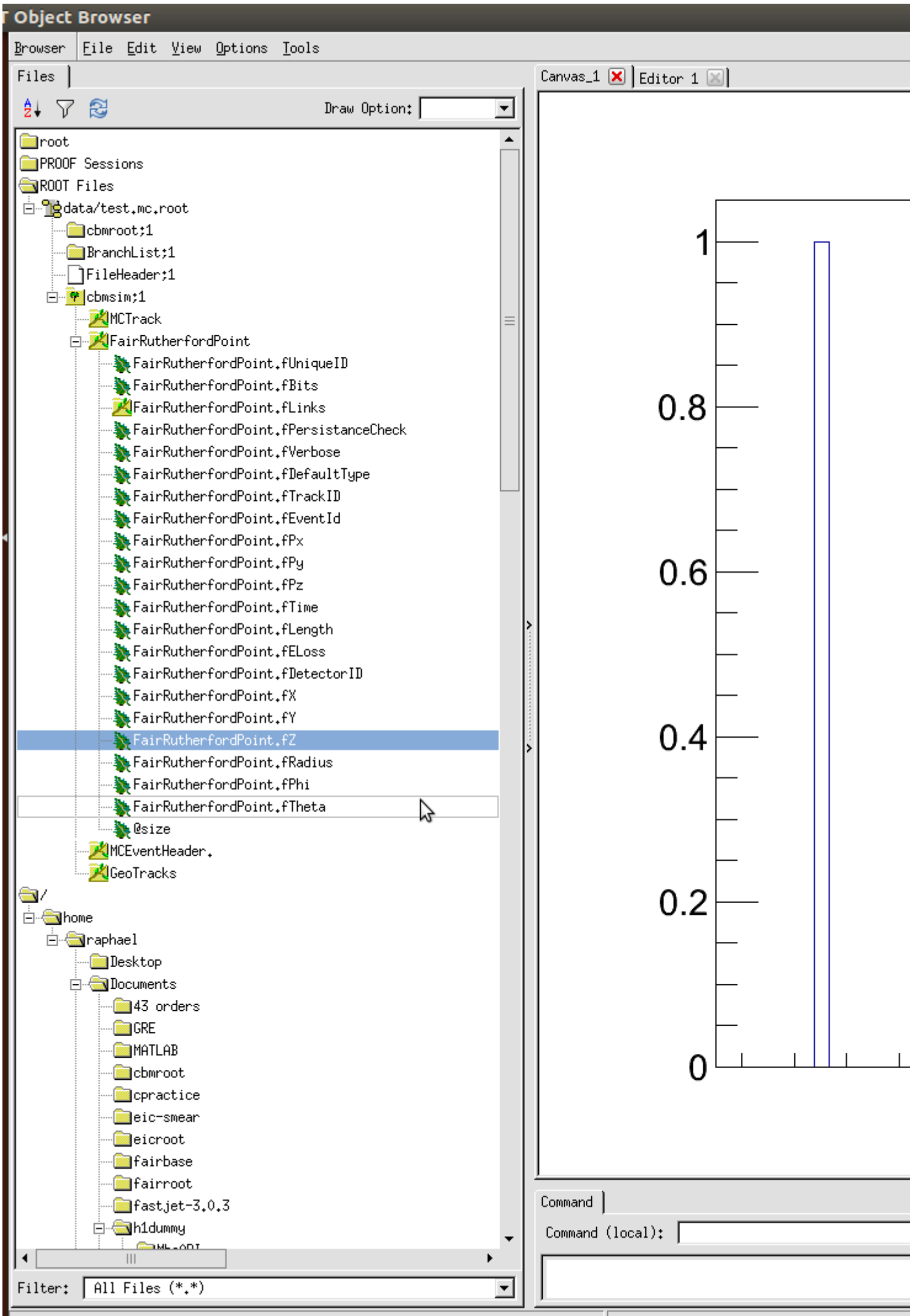
To give more background:
The way fairbase is in the repository, if you do
root fairroot/examples/rutherford/macros/run_rutherford.C
the output is contained in fairroot/examples/rutherford/macros/data/test.mc.root.

If I open the root file
root data/test.mc.root
TBrowser j
Then you will see the attached image. I would like to modify fairroot to include information about eta as one of the leaves of FairRutherfordPoint. Can someone tell me how to do that? Would I need to make changes to FairRutherfordPoint? FairMCPoint? etc...

I hope I'm making myself clear. All help is greatly appreciated
-Raphael

File Attachments

1) test.mc.root.png, downloaded 1107 times


Object Browser
Browser File Edit View Options Tools
Files
Draw Option:
root
PROOF Sessions
ROOT Files
data/test.mc.root
cbmroot;1
BranchList;1
FileHeader;1
cbmsim;1
MCTrack
FairRutherfordPoint
FairRutherfordPoint.fUniqueID
FairRutherfordPoint.fBits
FairRutherfordPoint.fLinks
FairRutherfordPoint.fPersistanceCheck
FairRutherfordPoint.fVerbose
FairRutherfordPoint.fDefaultType
FairRutherfordPoint.fTrackID
FairRutherfordPoint.fEventId
FairRutherfordPoint.fPx
FairRutherfordPoint.fPy
FairRutherfordPoint.fPz
FairRutherfordPoint.fTime
FairRutherfordPoint.fLength
FairRutherfordPoint.fELoss
FairRutherfordPoint.fDetectorID
FairRutherfordPoint.fX
FairRutherfordPoint.fY
FairRutherfordPoint.fZ
FairRutherfordPoint.fRadius
FairRutherfordPoint.fPhi
FairRutherfordPoint.fTheta
@size
MCEventHeader.
GeoTracks
/
home
raphael
Desktop
Documents
43 orders
GRE
MATLAB
cbmroot
cpractice
eic-smear
eicroot
fairbase
fairroot
fastjet-3.0.3
h1dummy
Filter:
All Files (*.*)
Canvas_1
Editor 1
1
0.8
0.6
0.4
0.2
0
Command
Command (local):

Subject: Re: getting run_rutherford to calculate eta parameter
Posted by Radoslaw Karabowicz on Wed, 14 Nov 2012 21:59:56 GMT
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Dear Raphael,

If you need some extra variable to be written to the root file,
then:

1. you have to edit FairRutherfordPoint.h and add the variable
in question to the private members, f.e.:
  Float_t fEta;

2. edit the FairRutherfordPoint.cxx and set the value
of the variable in the constructors, preferably after the places
when the fTheta values are set:
  fEta = -TMath::Log(TMath::Tan(fTheta/2.));

3. recompile

4. run the macro

Hopefully you will get the variable in the output tree as fEta.

yours
radek

Subject: Re: getting run_rutherford to calculate eta parameter [SOLVED]
Posted by Raphael Cervantes on Thu, 15 Nov 2012 15:53:34 GMT
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Thank you Radek,
That did the trick. For those who may have the same question as I do and who are as clueless as I am, make sure you include the TMath header in FairRutherfordPoint.cxx at the top so that compiling knows what is going on with Tan and Log
#include "TMath.h"
Do this at step 2.