
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 $\text{eta} = -\log(\tan(\theta/2))$, 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 753 times

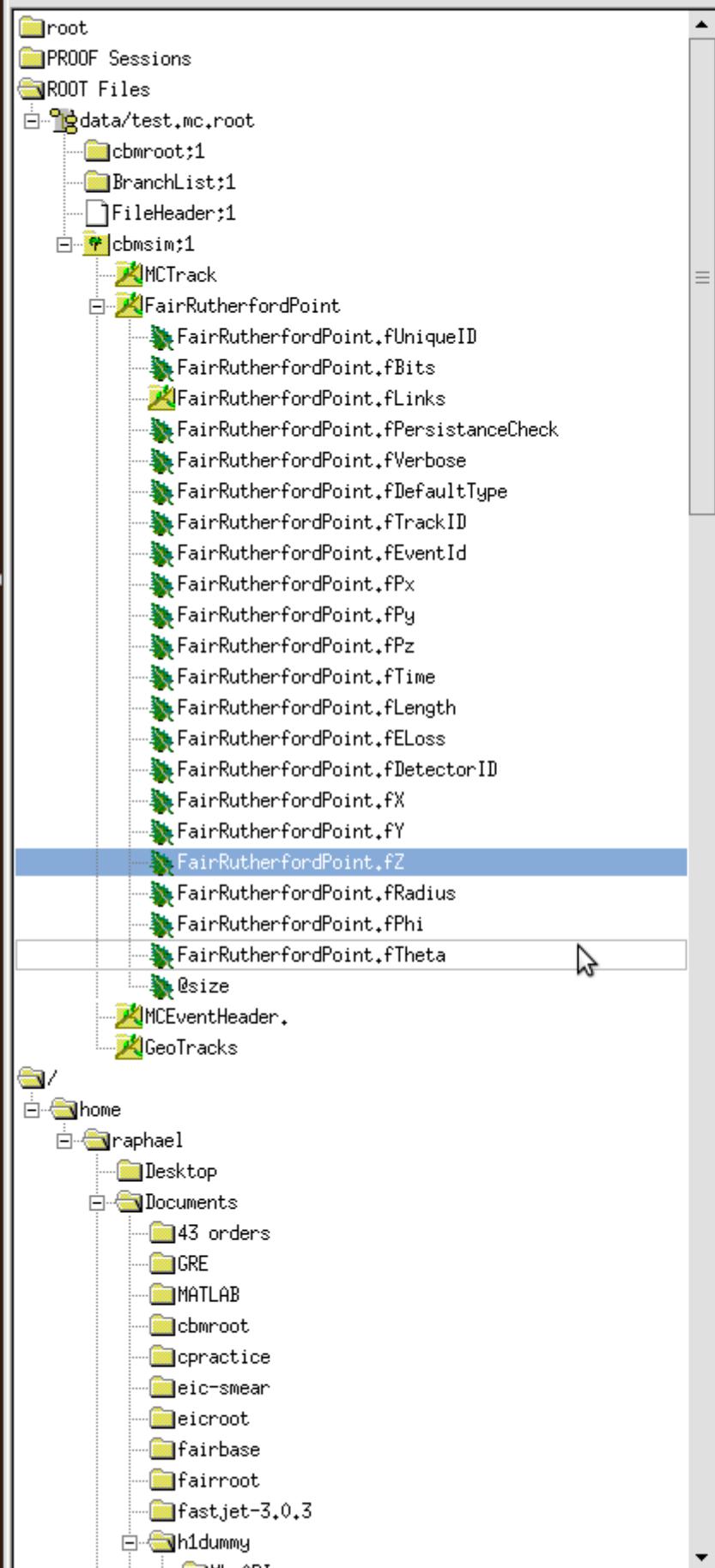
Object Browser

Browser File Edit View Options Tools

Files

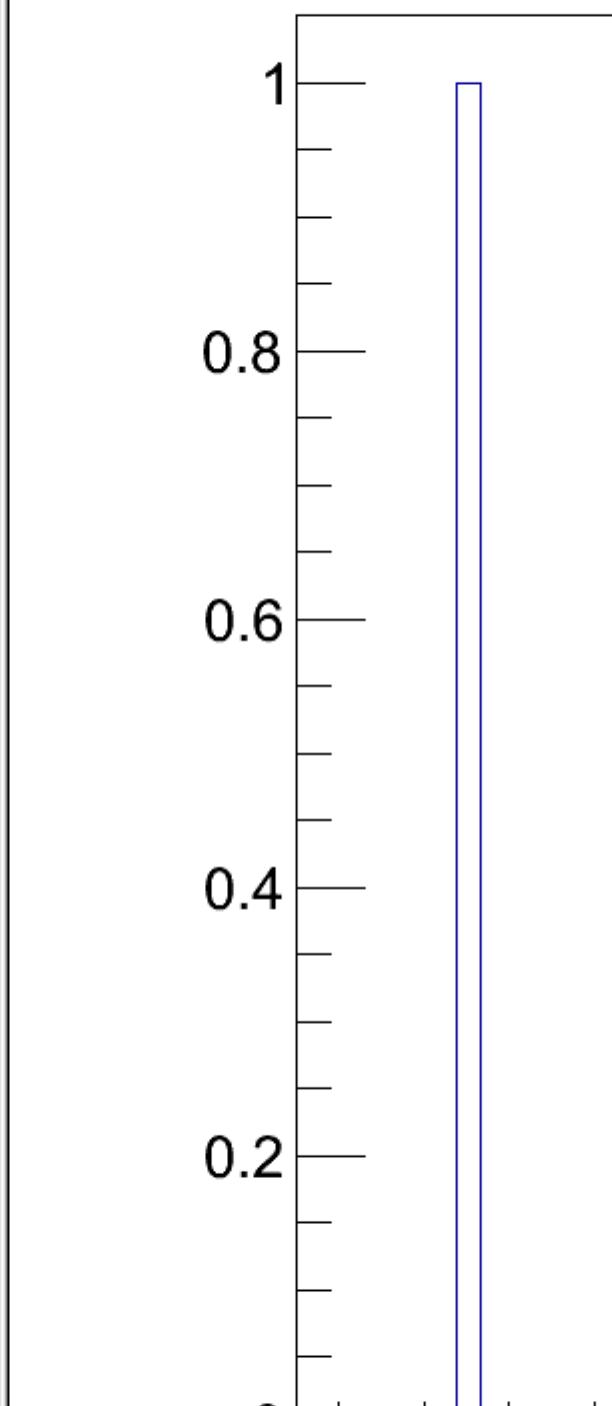


Draw Option:



Filter: All Files (*.*)

Canvas_1 Editor 1



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.
