Subject: [SOLVED] GetBeam Function Posted by Michael Kunkel on Mon, 16 Apr 2012 17:31:19 GMT

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Greetings,

I attempted to use the GetBeam() functionality of the new update and I seem to not understand how to use it.

Here is a macro

```
{
  TH1F * histo1 = new TH1F ("histo1", "Beam", 100, 1., 6);
  TH1F * histo2 = new TH1F ("histo2", "GetBeam", 100, 1., 6);
  TH1F * histo3 = new TH1F ("histo3", "Beam Reconstructed", 100, 1., 6);
  TH1F * histo4 = new TH1F ("histo4","e+e-",100,0.0.0.6):
//For Beam Smearing
  double ebeam min = 1.1725;
  double ebeam max = 5.44575:
  PBeamSmearing *beam smear = new PBeamSmearing("beam smear", "Beam smearing");
     TF1* beam_smear_fn = new TF1("beam_smear_fn", "1./x", ebeam_min, ebeam_max);
  beam smear->SetReaction("q + p");
  beam smear->SetMomentumFunction(beam smear fn):
  makeDistributionManager()->Add(beam_smear);
//For Form Factor =1 ie. QED
  ((PDalitzDecay *
)makeDistributionManager()->GetDistribution("eta_dalitz"))->SetUseQED(1);
//Set-up Reaction
  PReaction my_reaction("_{P1} = 2.2","g","p","p eta [dilepton [e+ e-] g]","eta_dalitz",1,0,0,0);
//Do Histograms
  my_reaction.Do(histo1,"_x = [g,1]->E()");
  my_reaction.Do(histo2,"_x = [g+p]->GetBeam()");
  my_reaction.Do(histo3,"ene = (([p,2] + [eta]) - [p,1]);_x=ene->E()");
  my_reaction.Do(histo4,"mass = [e+] + [e-];_x=mass->M()");
//Do Reaction
  my reaction.Print();
  my reaction.Loop(10000);
//Draw
  TCanvas c1: TCanvas c2: TCanvas c3: TCanvas c4:
  c1->cd();
  histo1->Draw();
  c2->cd():
  histo2->Draw();
  c3->cd():
  histo3->Draw();
```

```
c4->cd();
histo4->Draw();
}
```

What I am trying to do, it ensure that a bream photon beam is being used. Also it seems my histo3 will not return values.

Would someone tell me what I am doing incorrectly.

I am using PLUTO 5.40 with ROOT 5.30

Thanks in advance.

Michael C. Kunkel

Subject: Re: GetBeam Function

Posted by Ingo Fröhlich on Mon, 16 Apr 2012 18:26:25 GMT

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GetBeam() returns a PParticle object, so I think you should use something like

 $my_reaction.Do(histo2,"_x = ([g+p]->GetBeam())->E()");$

to project a scalar onto the x-axis.

ene is empty, because you use a second proton, but in the outgoing channel you have only one (I know I should throw some warning but this is not so easy for mixed channels)

Subject: Re: GetBeam Function

Posted by Michael Kunkel on Mon, 16 Apr 2012 19:42:02 GMT

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Thanks for helping me with the GetBeam, I had tried that but I used x = [g+p]-GetBeam()->E()

instead of

```
_x = ([g+p]->GetBeam())->E()
```

Thanks for that clarification.

As for the histo3, I understand. I had tried using

[p,1]+[eta]-([g+p]->GetTarget())

but as you stated before, this just points to the PParticle, instead I had to

 $my_reaction.Do(histo3,"ene = (([p,1] + [eta]));_x=ene->E() - 0.938272");$

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