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("g + 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 Froehlich 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");