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Subject: True vertex position for secondary decay vertices  
Posted by [Ajay Kumar](#) on Mon, 12 Jan 2015 20:31:35 GMT  
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Dear All,

I am trying to find true vertex position for  $\Lambda^0 \rightarrow p \pi^-$  and  $\Lambda^0 \rightarrow \bar{p} \pi^+$ . I have four track from the simulation and used PndMCTrack to find the true vertex position of  $\Lambda^0$  and  $\Lambda^0$  particles. I am using GetStartVertex() to find the vertex of lambda from its decay particle as below.

```
if(mctrack->GetSecondMotherID()==1){
    if (mc_pid==2212)
    {
        vtx_x= mctrack->GetStartVertex().X ();
        vtx_y= mctrack->GetStartVertex().Y();
        vtx_z= mctrack->GetStartVertex().Z();
        // r = sqrt(pow(vtx_x,2)+pow(vtx_y,2));
        // countT1++;
        //rzp-> Fill(vtx_z,r);
        // if (vtx_z< 40)
        // countT2++;

    }
}
```

Is It giving the true vertex position of  $\Lambda^0$  or not?  
If not then how I should go for it?

Thanking you

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