Subject: Re: Event filtering for lambda and lambdabar in DPM
Posted by donghee on Fri, 04 Apr 2014 10:06:47 GMT
View Forum Message <> Reply to Message

Hi Stefano,

This is not a problem.
DPM events contains some amount of lambda and lambdabar particles.
When I compare the lambda and lambdabar MC data between DPM and EvtGen produced by pbar p -> L + Anti-L, I have to take into account the fraction of lambda and lambdabar event at DPM production in the estimation of efficiency or background reduction.
Otherwise the background efficiency should be too high in the event selection due to the contamination of ordinary lambda particle in DPM. Lambda produced at DPM can have same signature as like lambda produced at EvtGen.
Of course, the size of lambda multiplicity depends on the given beam momentum due to different cross section.

There are few different solutions in my understanding.

1. exclude lambda particle during the DPM generation by Event filtering.
2. exclude lambda particle passed event selection when the DPM data is analysed only for lambda and lambdabar study.
3. get the fraction of lambda at the DPM generation, then use this fraction to scale down the background efficiency.
4. ignore lambda DPM produced, because the fraction should be small, is the level of below 1%, can be negligable quantity.

It is quite well known issue when we study the lambda and lambdabar production with DPM generator.

Best regards,
Donghee