Subject: PID combiner with different detector
Posted by donghee on Mon, 04 Nov 2013 21:02:28 GMT
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Hi all,

I have a fundamental question about PID combiner.
In our analysis we are using PID combiner, which combines the probability values from different detectors.

Let assume a simple situation.
I want to identify electron from EMC+MUO+STT+DRC combination.
In some cases, I assume that the probability from MUO should be zero due to absorbing the electron already in EMCalorimeter.
In practice, MUO doesn't contribute electron PID.
If I multiply P(EMC)XP(MUO), then total probability should be zero because of P(MUO)=0 and will be set as 0.2 which is an eqaul probability of 5 hypothesis.

So effective way to identify the electron should be EMC+STT+DRC combination without MUO.
This means that one need to define best combination for 5 different particles.

Is there some study on this issue? or can we recommend simply EMC+STT+DRC+MUO+DISC+MVD combination for each particle hypothesis in practice at PID analysis?

Best regards,
Donghee