Weekly report

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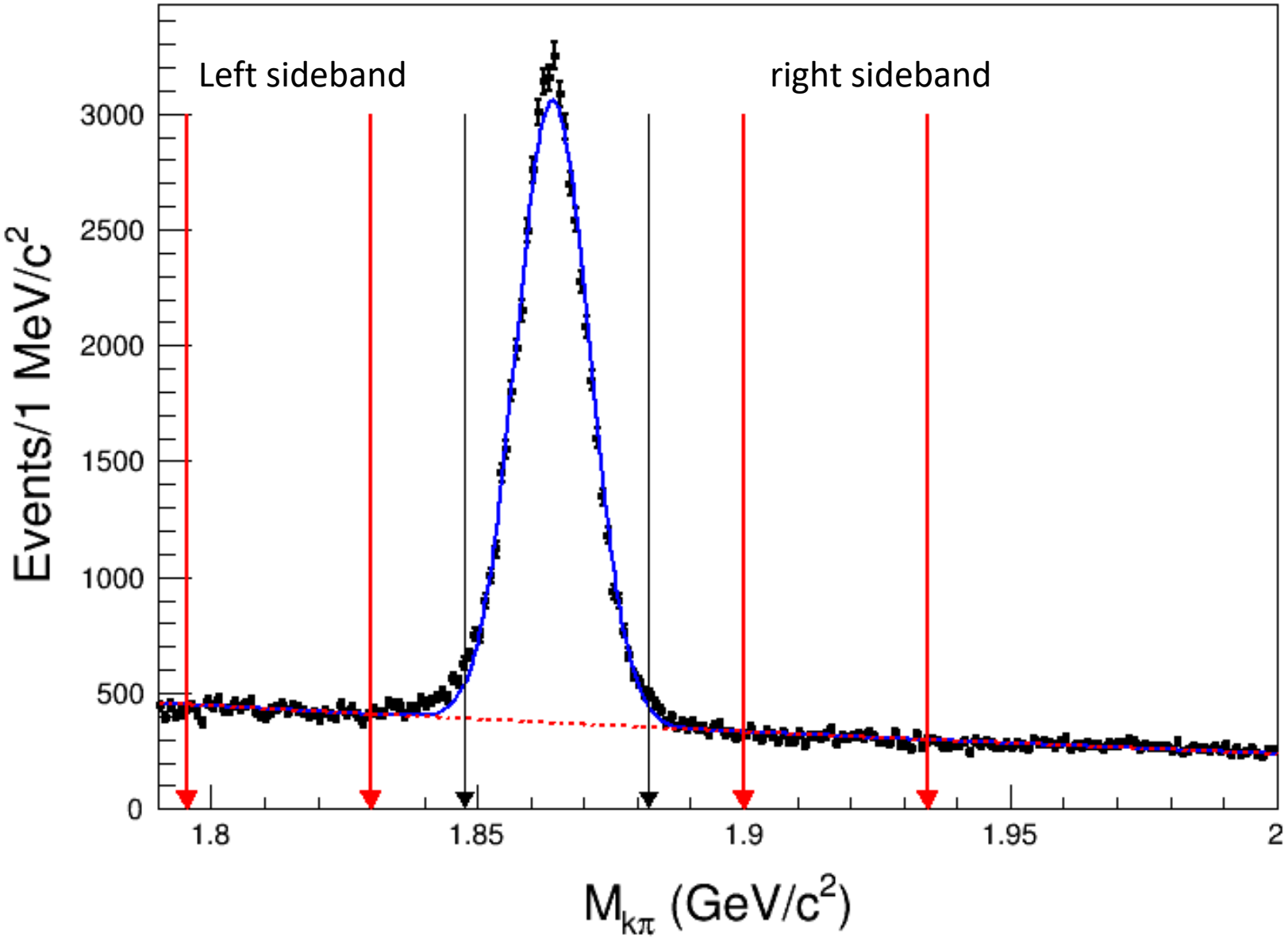
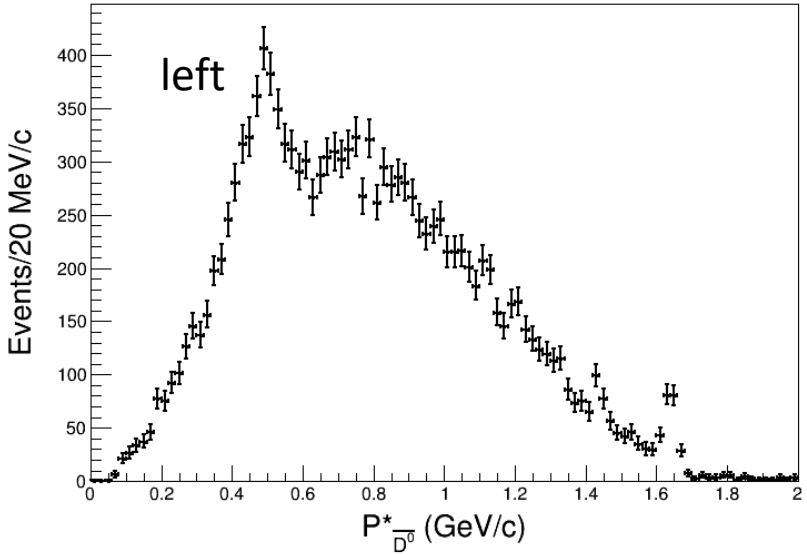
2017.4.7

The problem of momentum spectrum fit at 4010MeV data

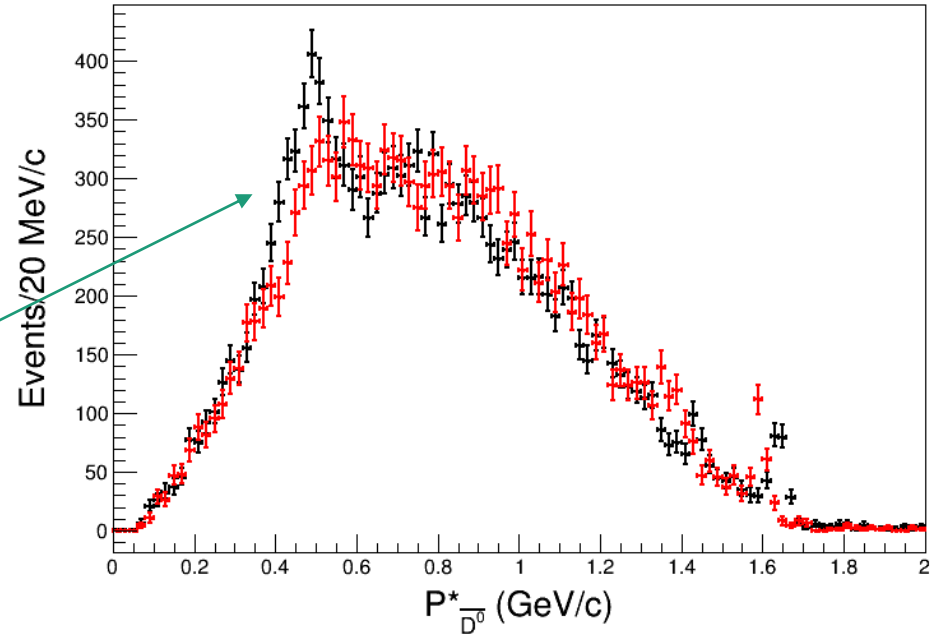
- One possible reason is there are some background processes, such as$D^0\overline{D}^0\gamma$, $D^0\overline{D}^0\pi^0$ and $D^{*0}\overline{D}^0\gamma$.
- One possible reason is there are some difference between left sideband and right sideband in momentum spectrum shape.
- One possible reason is that MC momentum shape has some problems , cause the MC momentum shape depends on cross section line shape. I can not get correct cross section line shape at first.
- I study if there are some difference between left sideband and right sideband in momentum spectrum shape last week.

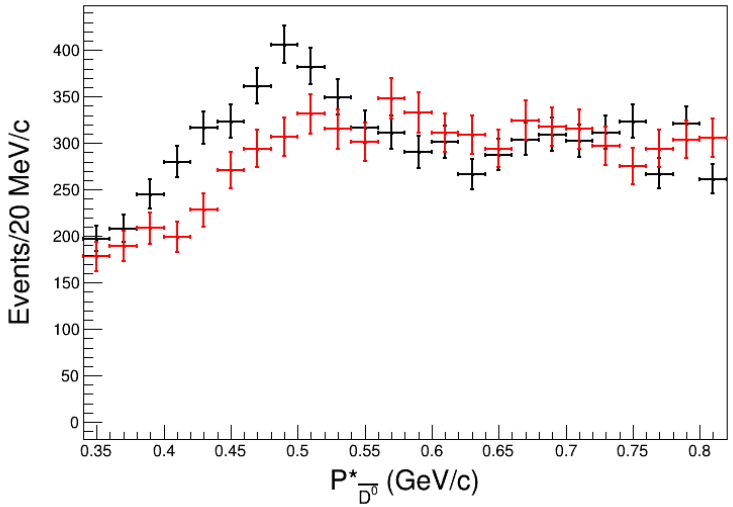

Left sideband
right sideband
Events/1 MeV/c²
3000
2500
2000
1500
1000
500
0
1.8
1.85
1.9
1.95
2
M_kπ (GeV/c²)

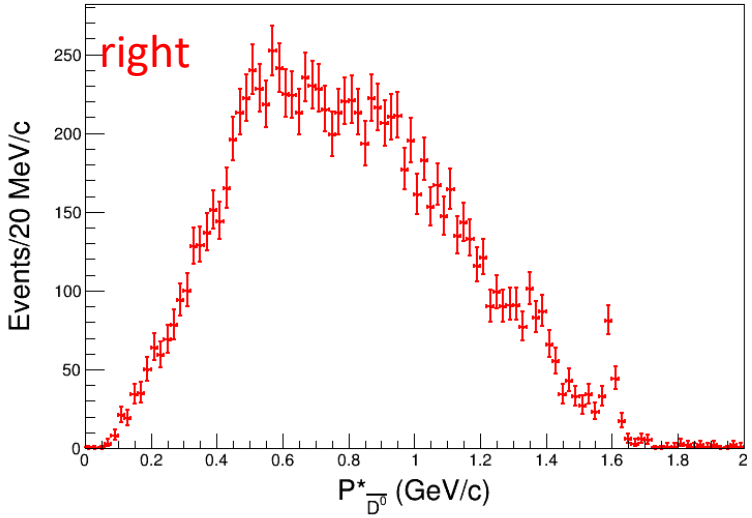


The momentum spectrum of left sideband

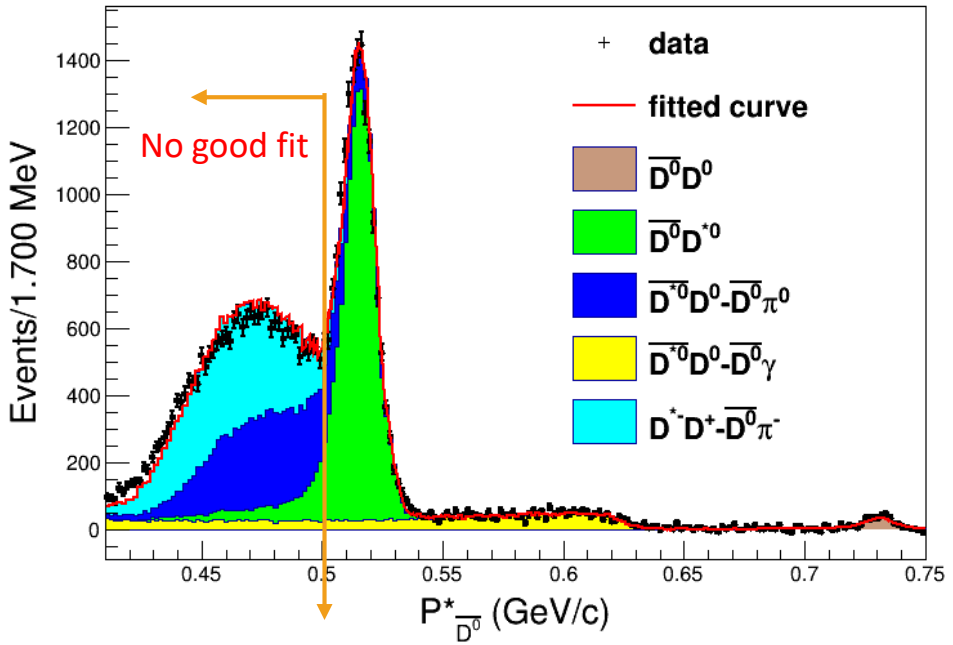
Enlarge the figure

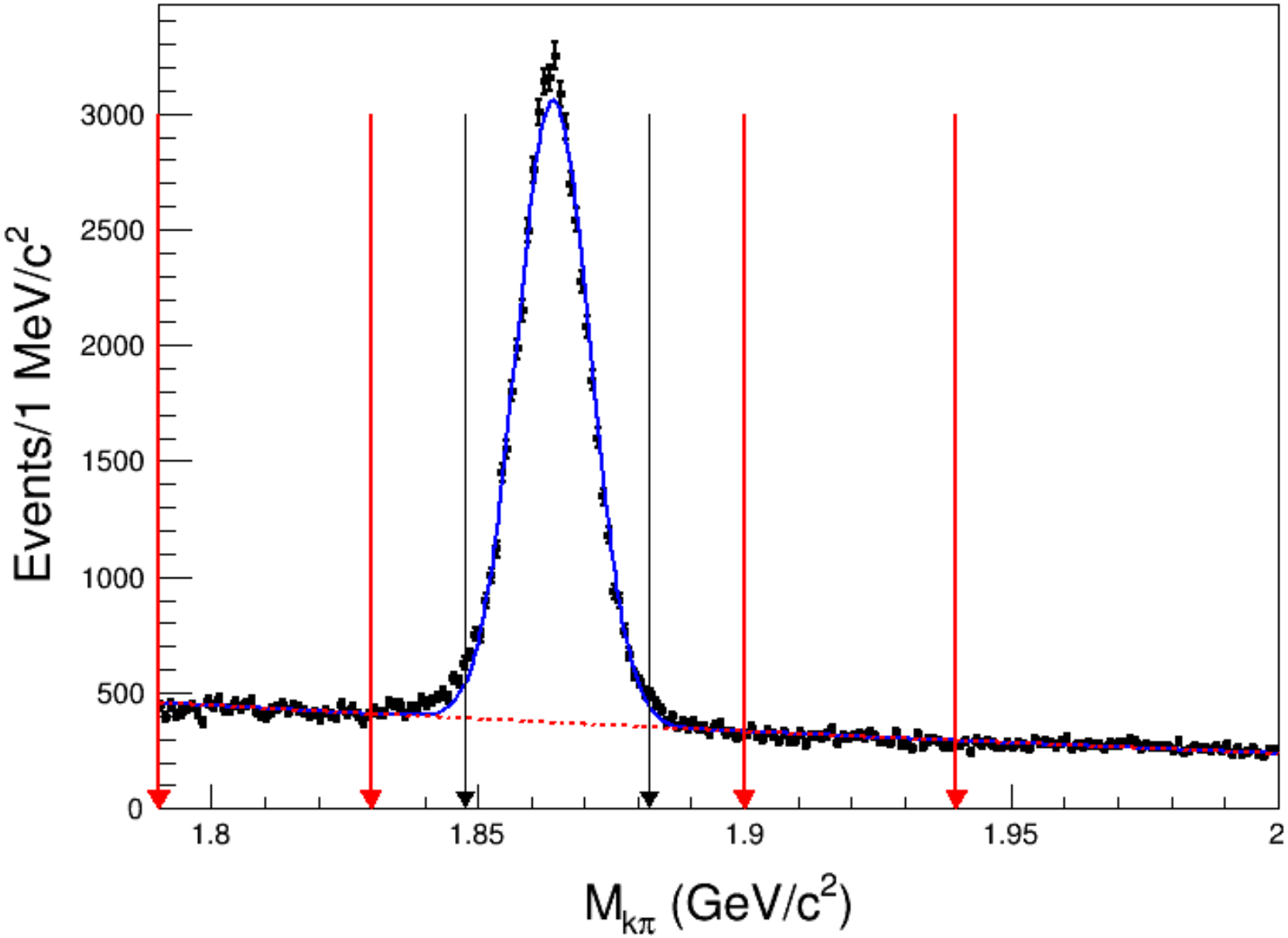




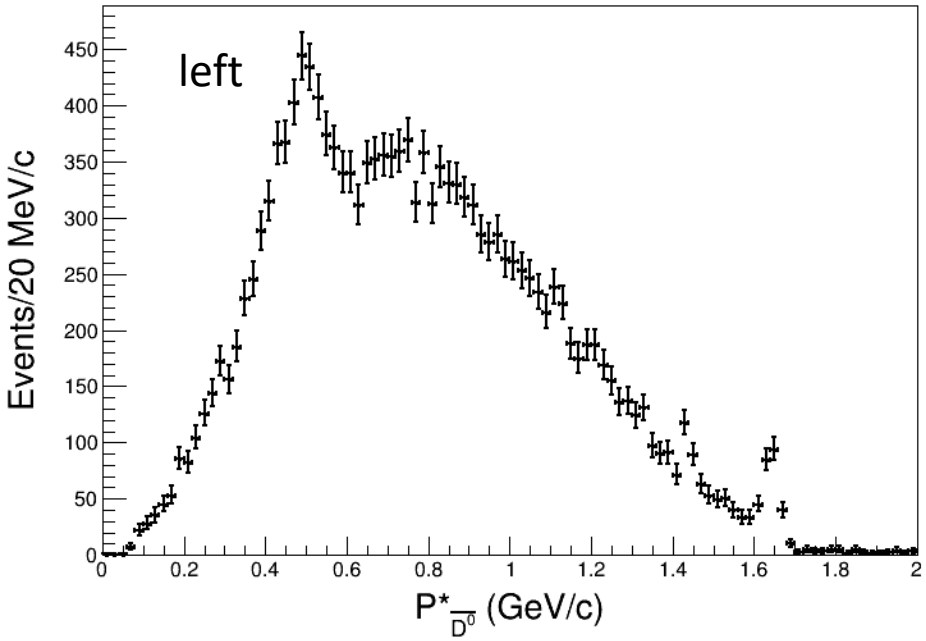


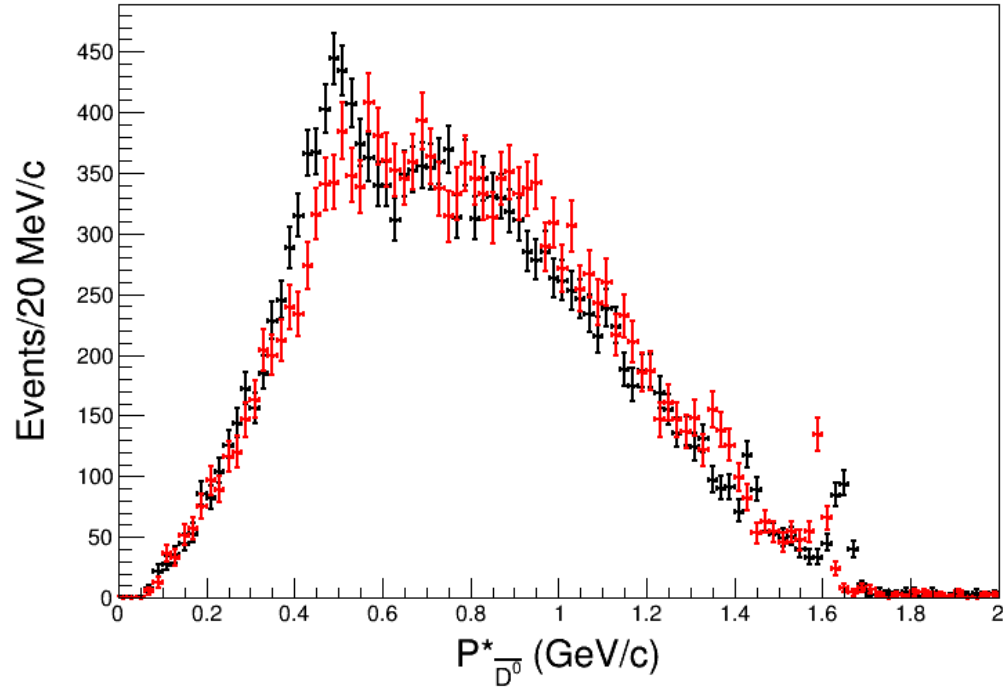
The momentum spectrum of right sideband

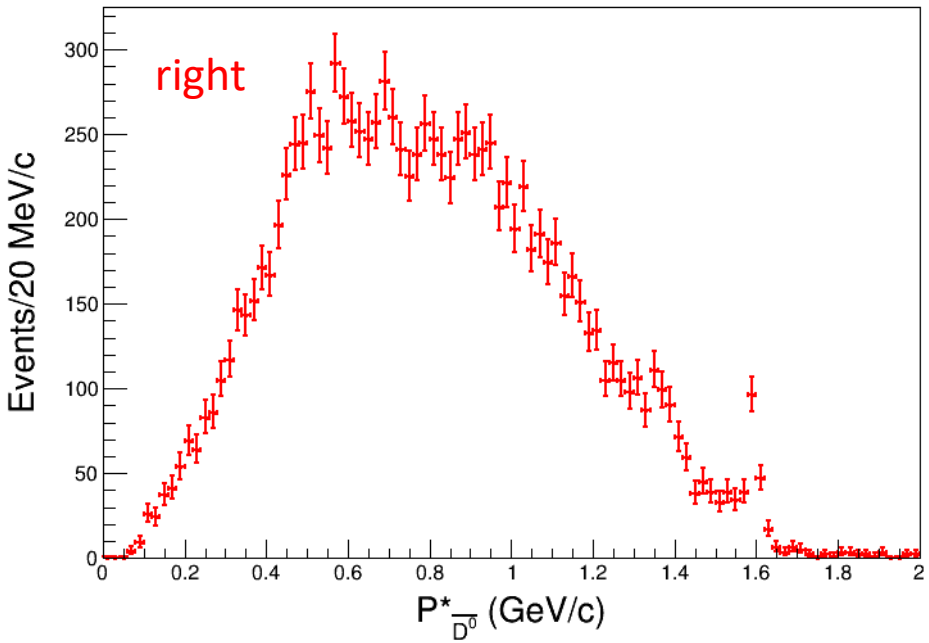


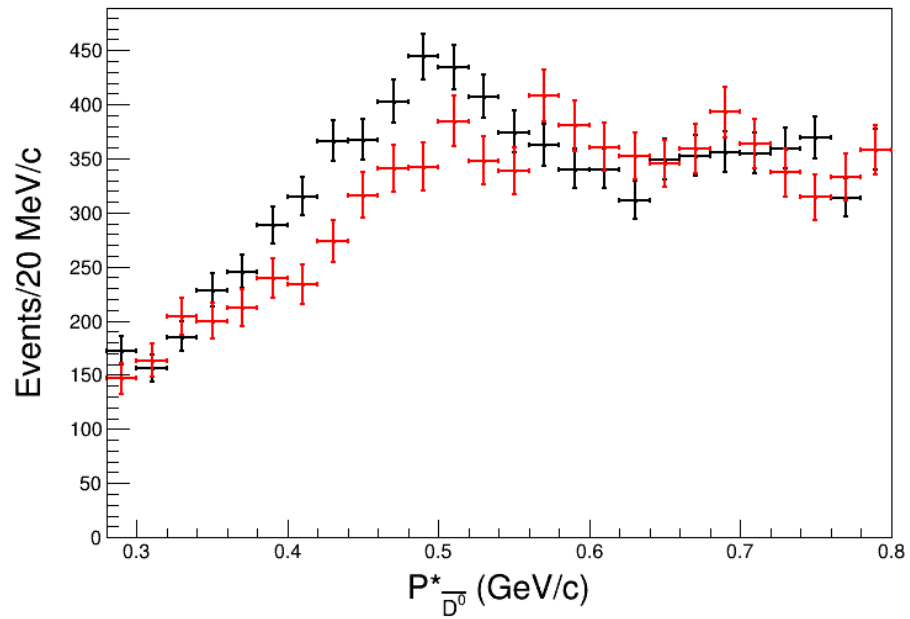


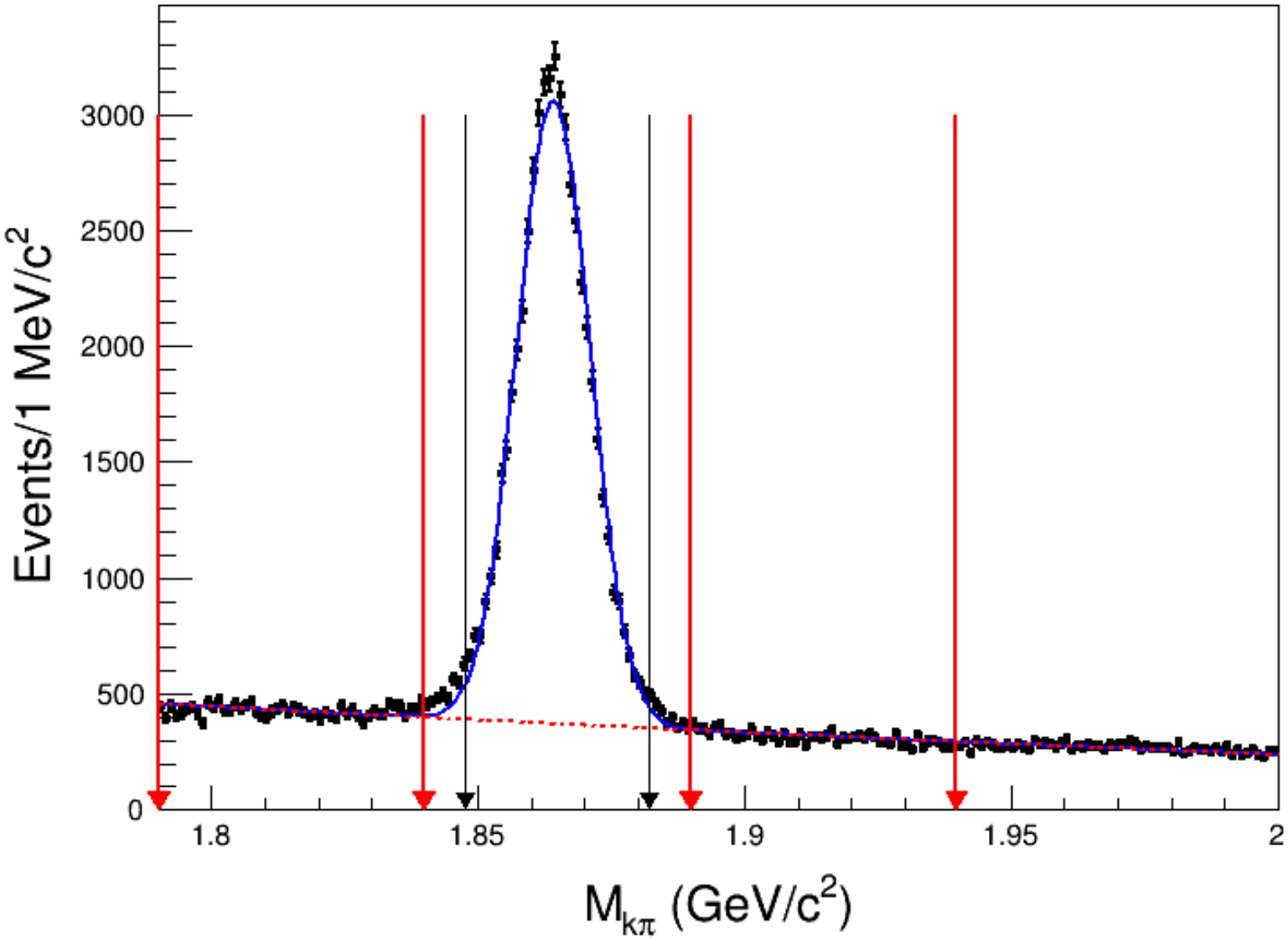
Increase the left and right sideband ranges to reduce the statistical error


left
Events/20 MeV/c
$P^*_{\overline{D^0}}$ (GeV/c)

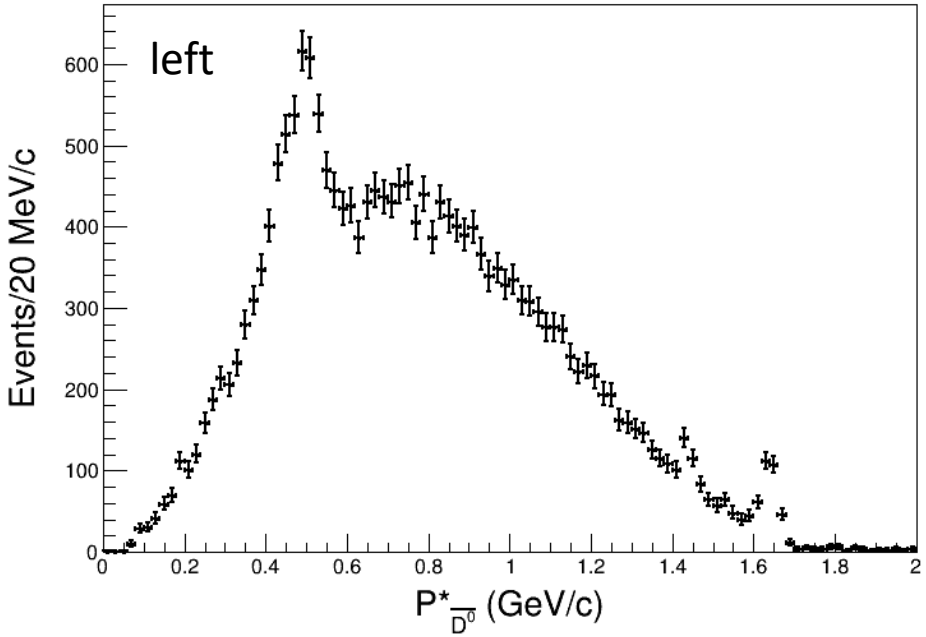

Events/20 MeV/c
$P^*_{\overline{D^0}}$ (GeV/c)

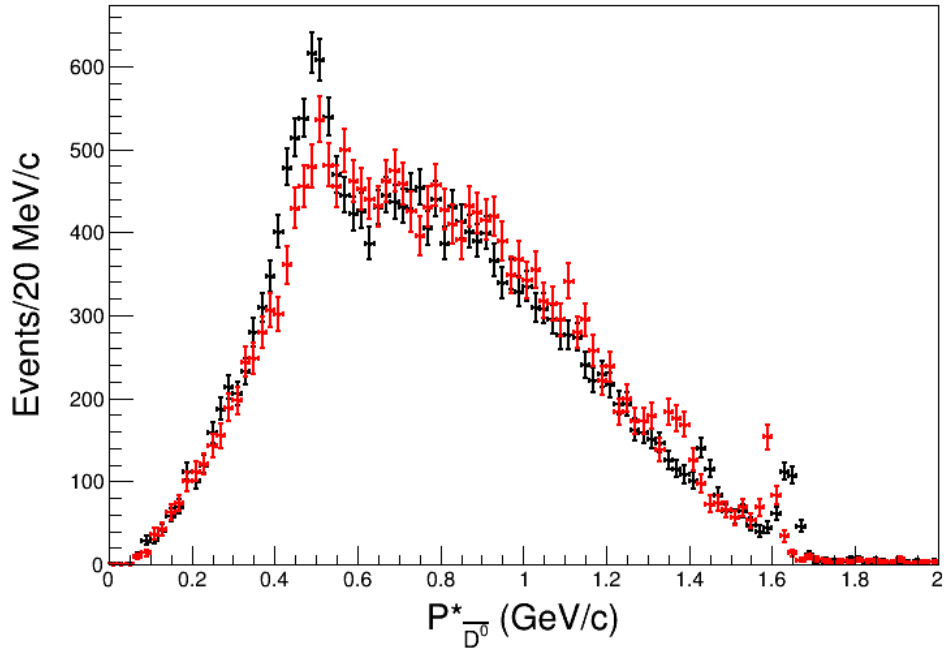

right
Events/20 MeV/c
$P^*_{\overline{D^0}}$ (GeV/c)

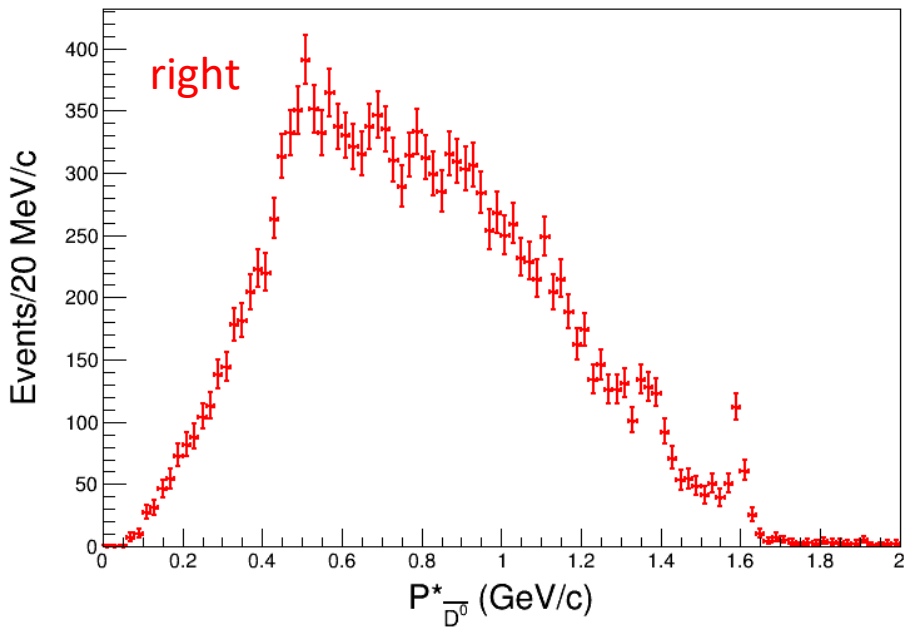

Events/20 MeV/c
$P^*_{\overline{D^0}}$ (GeV/c)

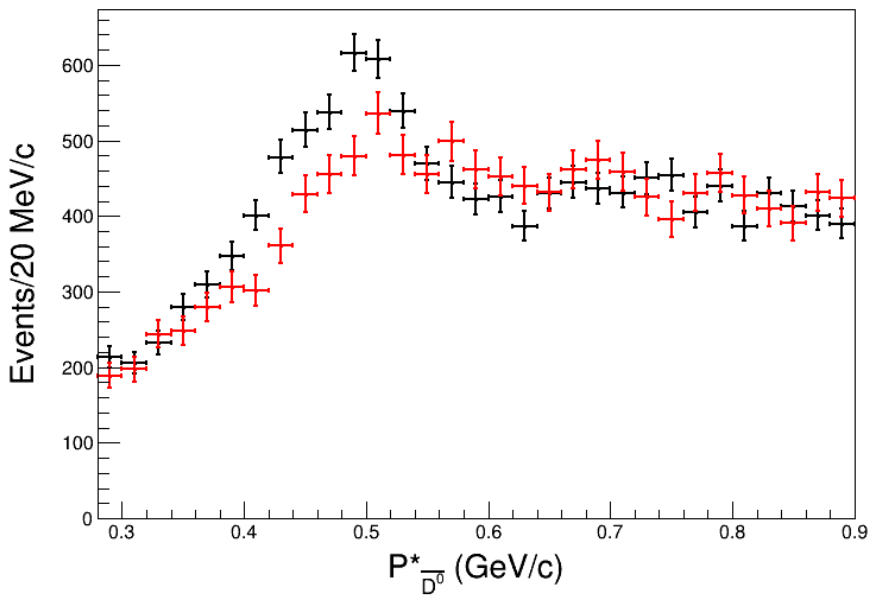


Increase the left and right sideband ranges again to reduce the statistical error

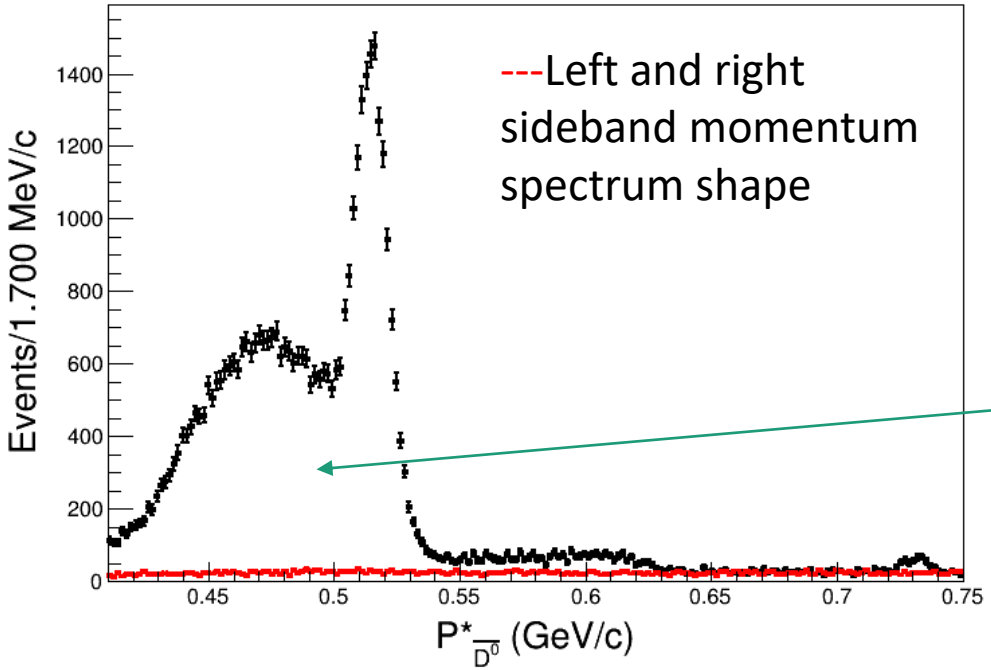


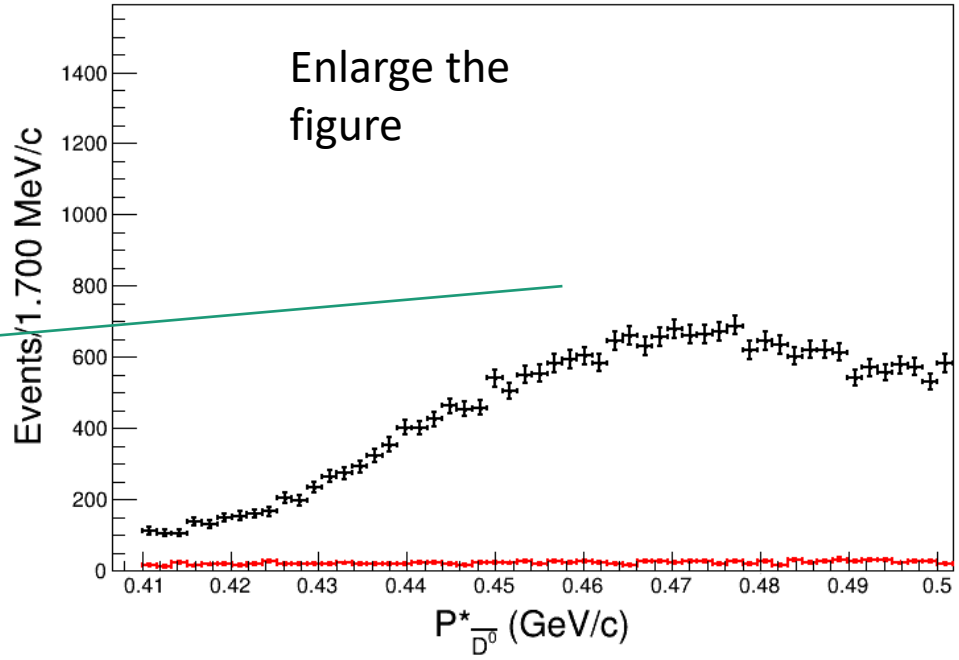


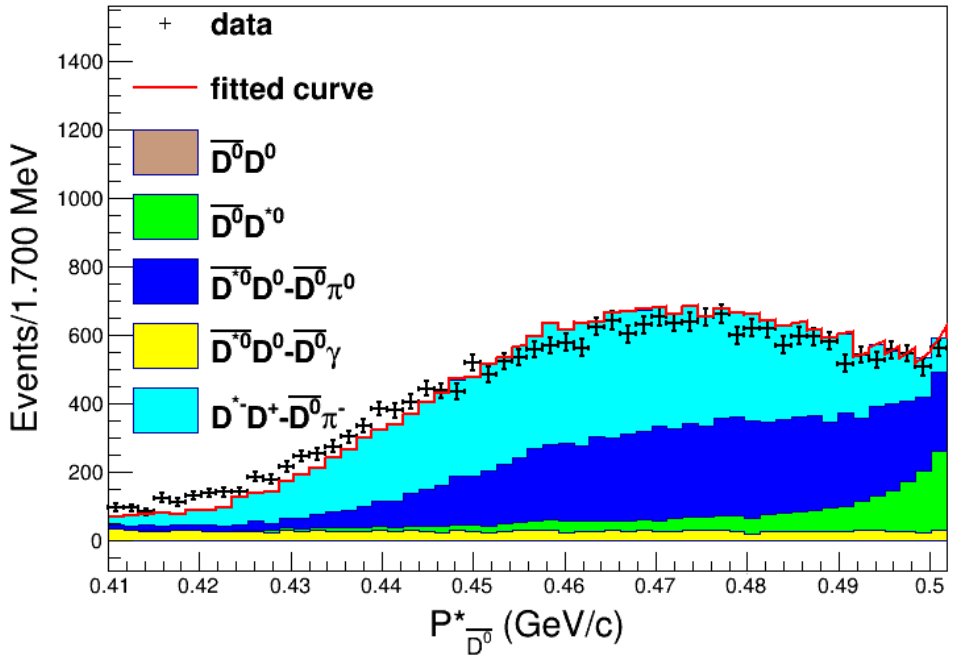




The uncertainty of sideband momentum spectrum shape will cause about error of twenty percent


---Left and right sideband momentum spectrum shape
Events/1.700 MeV/c
P*D0 (GeV/c)


Enlarge the figure
Events/1.700 MeV/c
P*D0 (GeV/c)


data
fitted curve
D0D0
D0D*0
D*0D0-D0π0
D*0D0-D0γ
D*-D+-D0π-
Events/1.700 MeV
P*D0 (GeV/c)