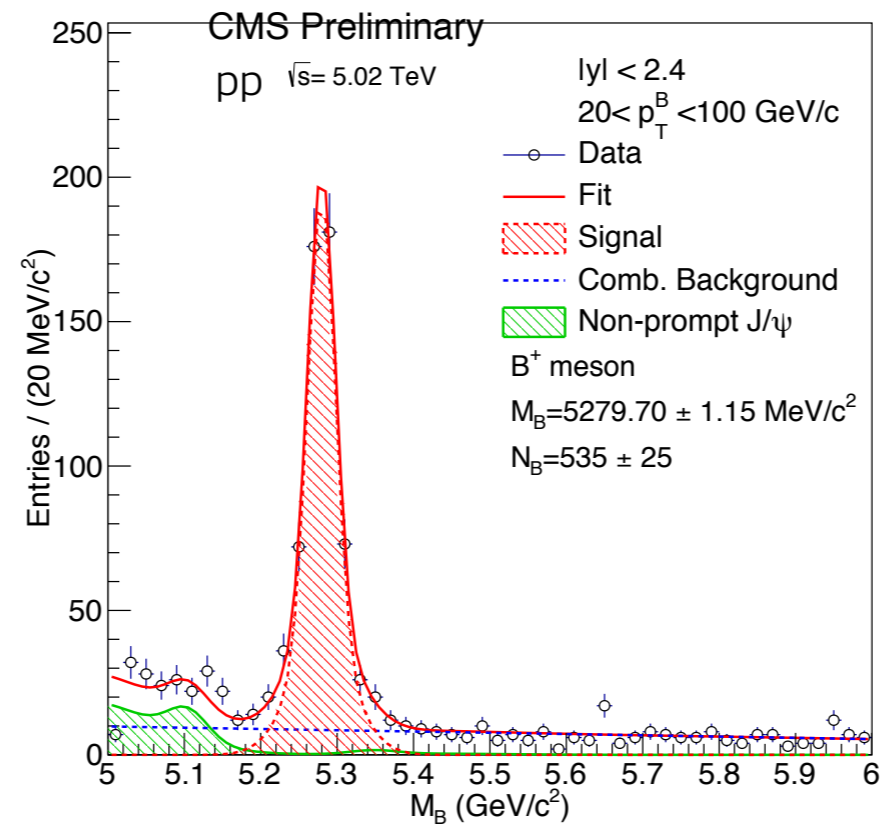


B meson status

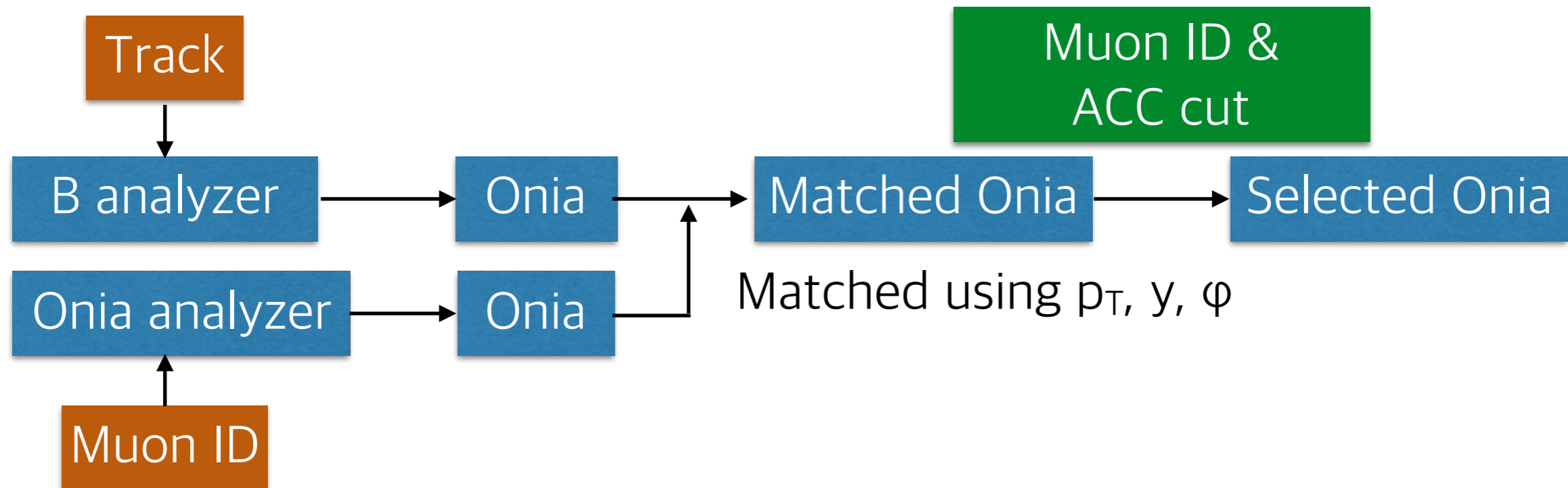
KiSoo Lee

Previous



- MuonID, Acceptance are not applied before
- Almost events lost after applying MuonID and Acceptance

Candidate lose



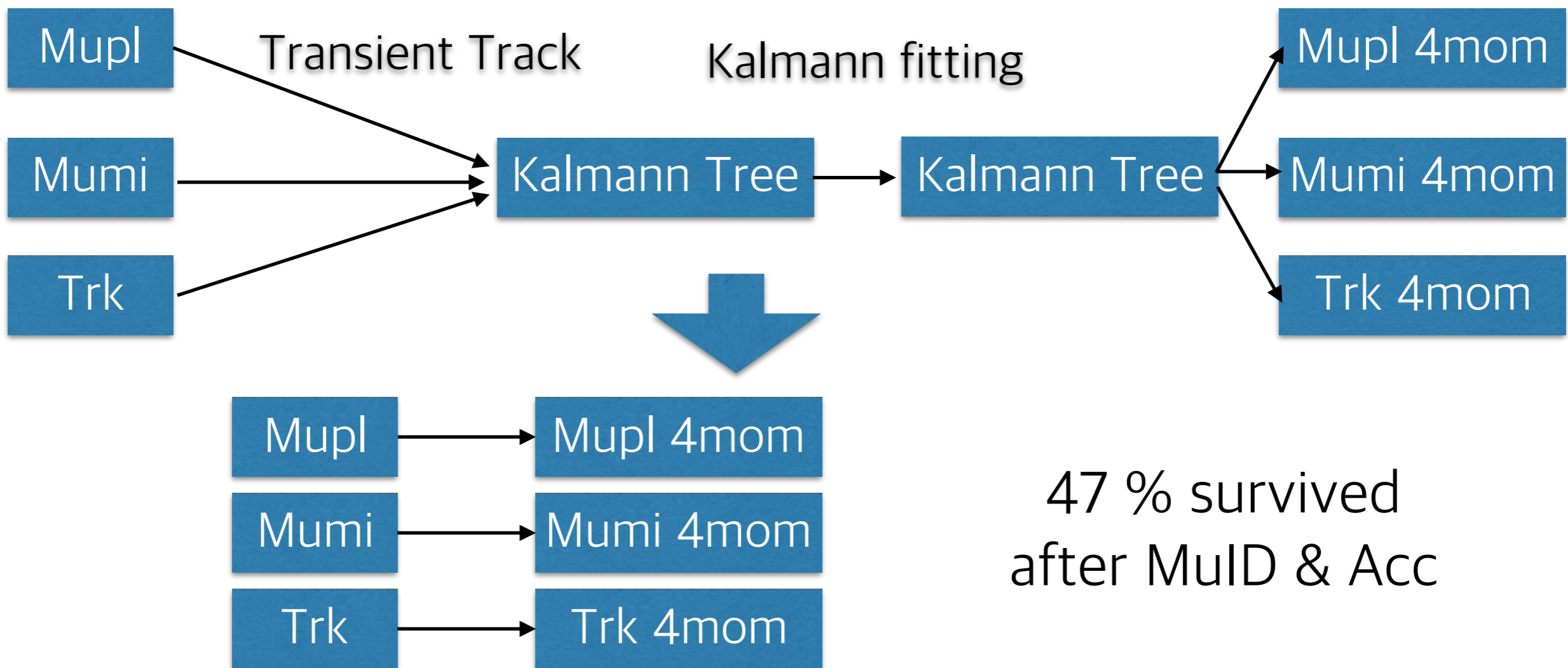
Matching result	$ d = 0$	$ d < 0.1$
Onia in B analyzer	195,164	195,164
Onia in Onia analyzer	182,379	182,379
matched Onia	137,571 (70.5 %)	137,803 (70.6 %)
multi matched Onia	0	12
Muon ID	134,600 (69.0 %)	
Acc with B analyzer	5,772 (3.0 %)	
Acc with Onia analyzer	92,934 (47.6 %)	

muon 4 momentum

B analyzer → Component of Kalmann Tree

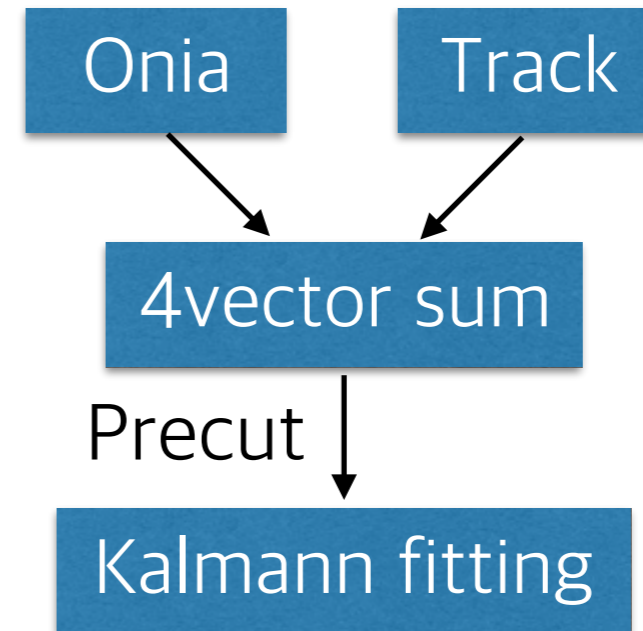
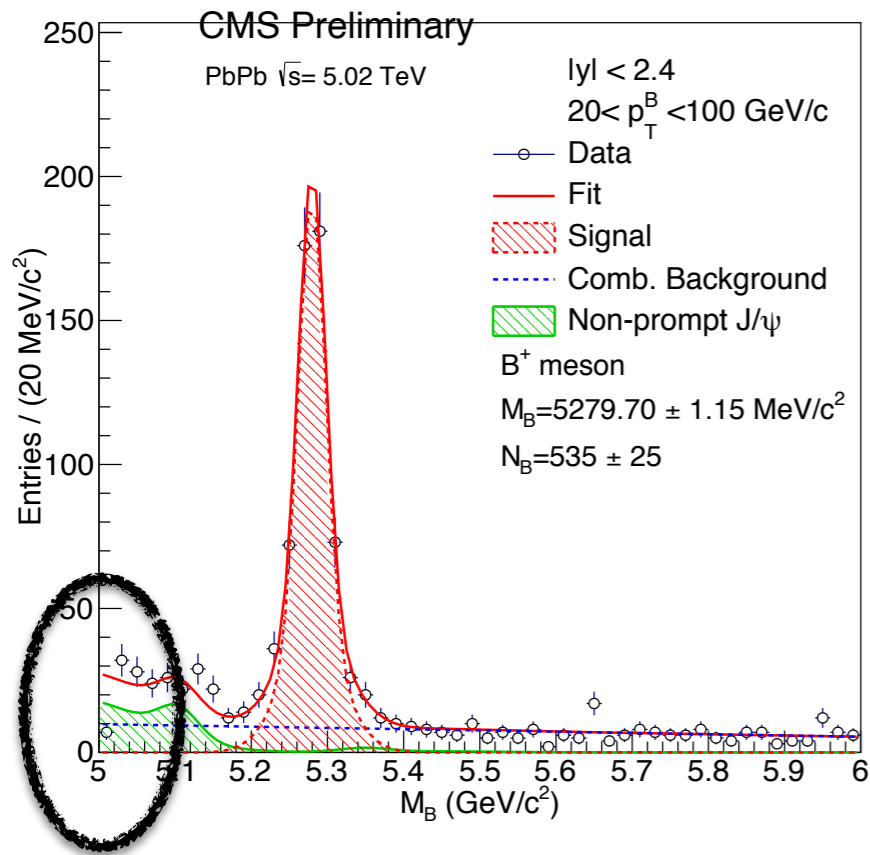
Onia analyzer → Daughter of Onia candidate from skim

B finder → Reco Muon



47 % survived
after MuID & Acc

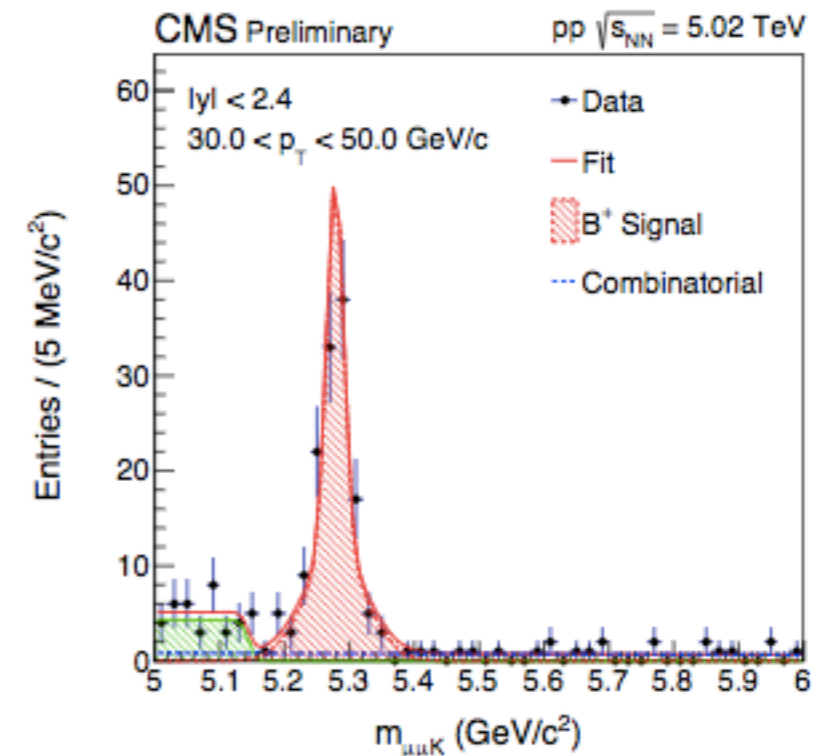
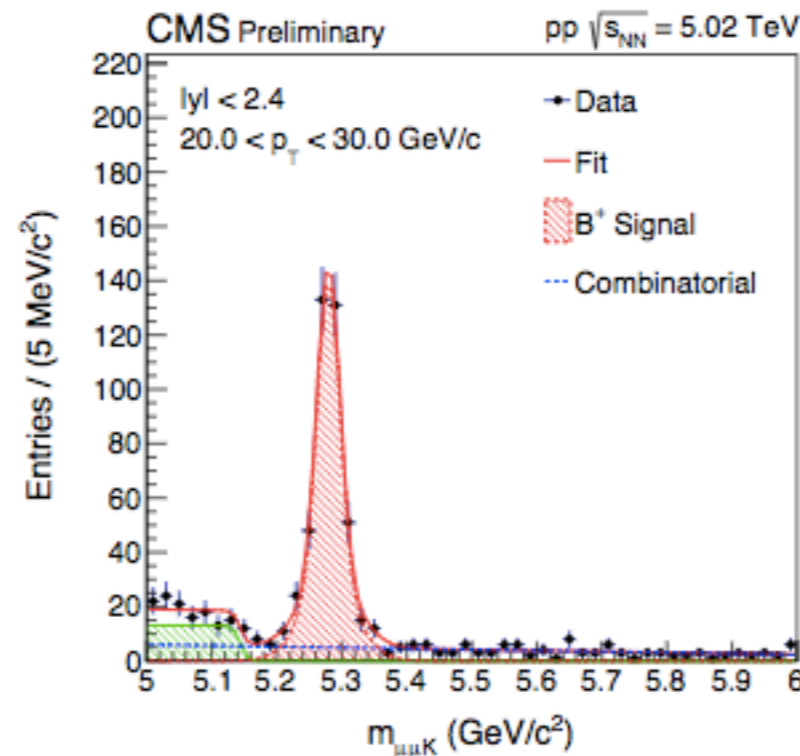
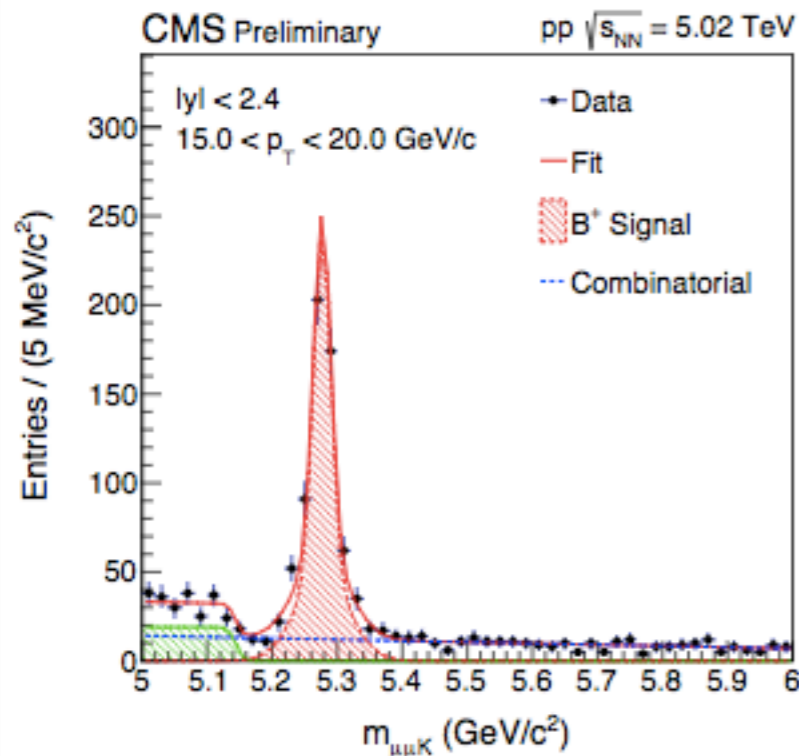
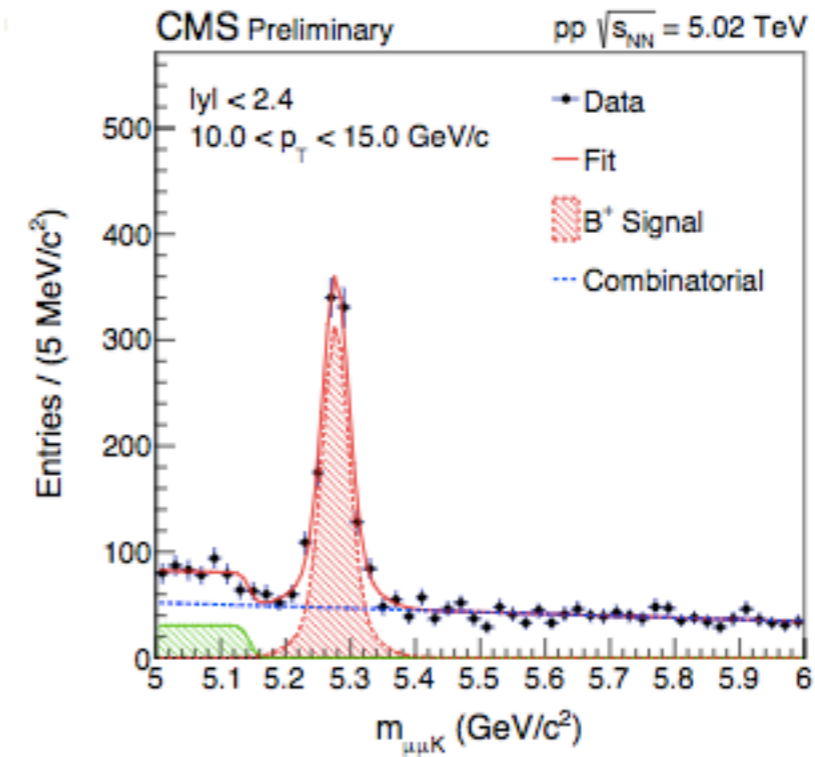
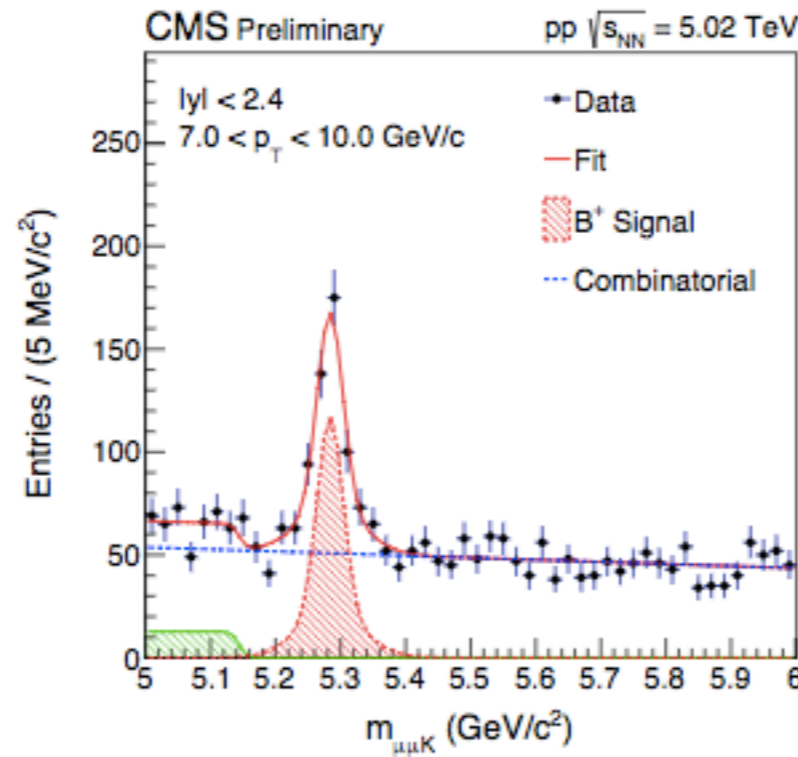
Fall down edge issue



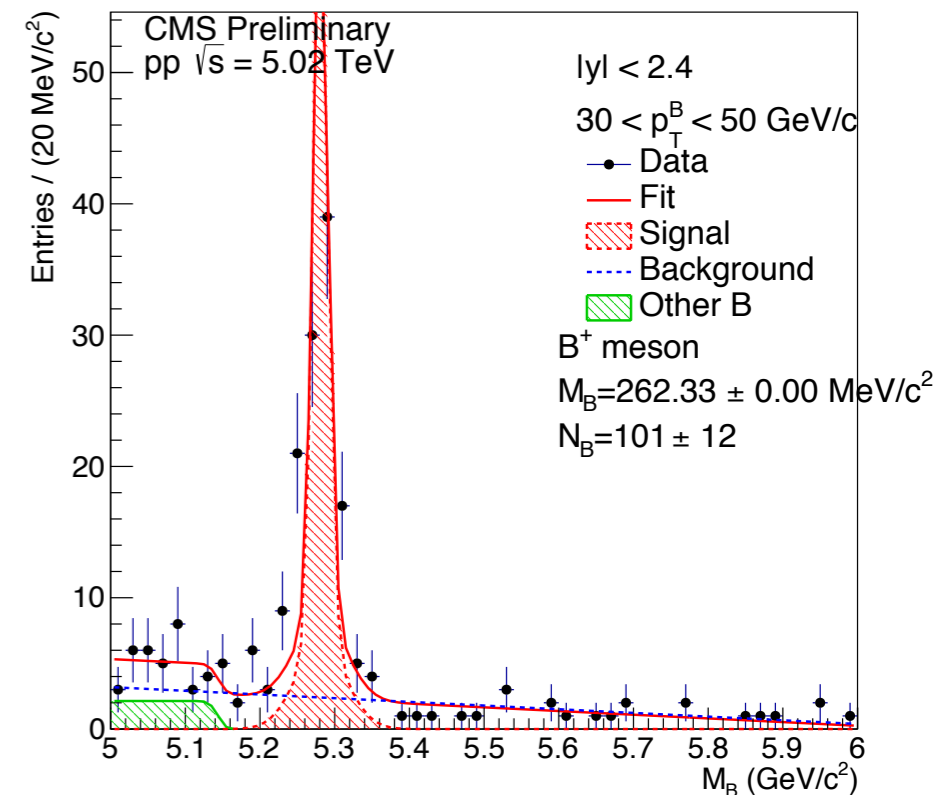
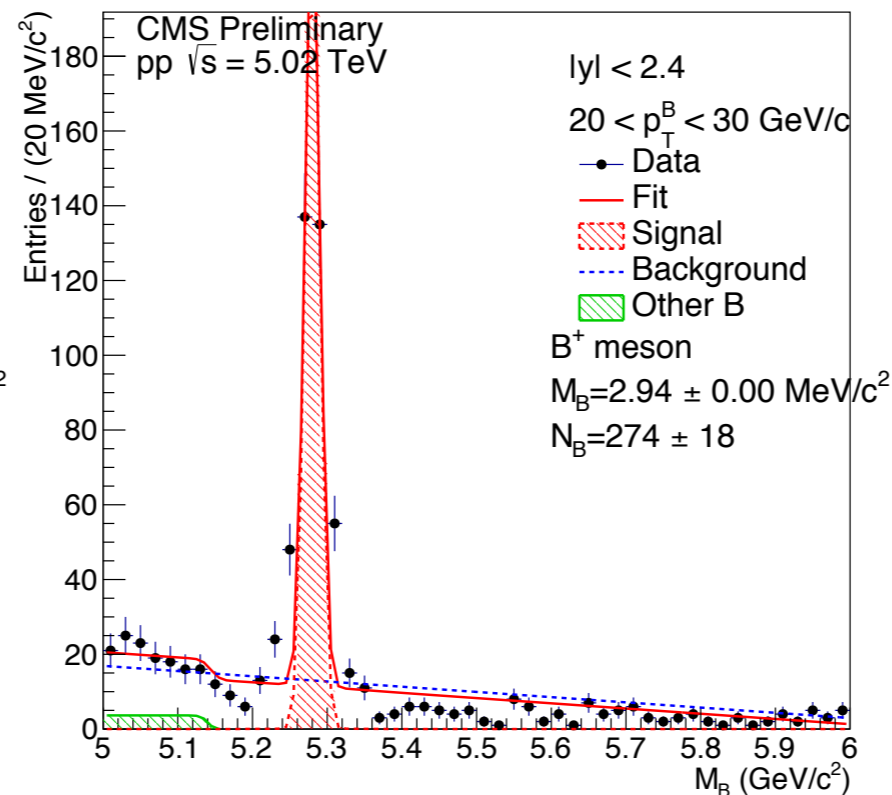
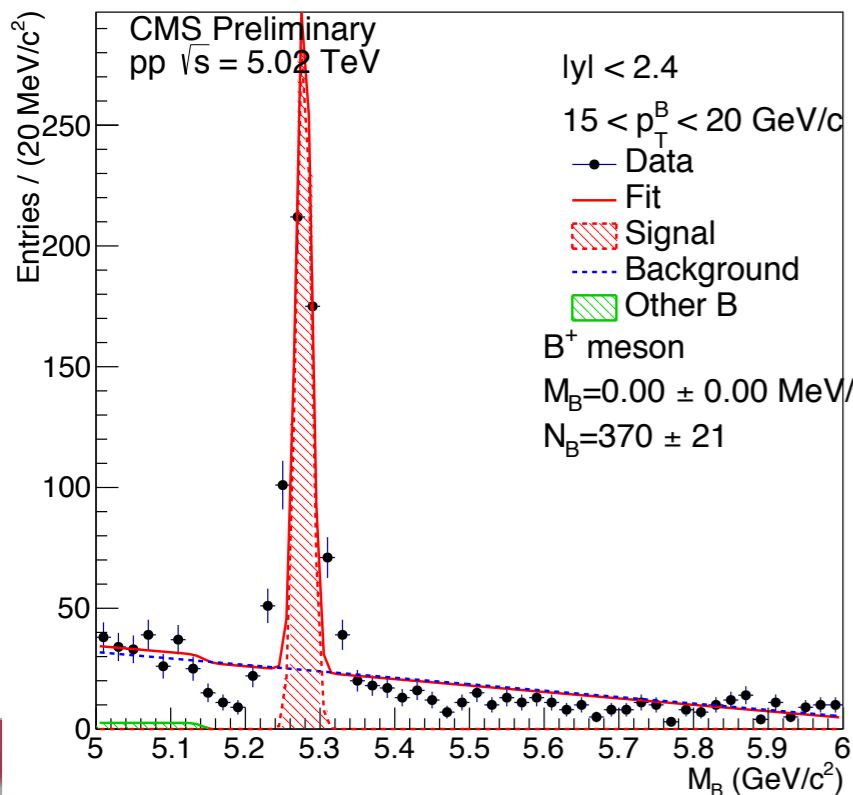
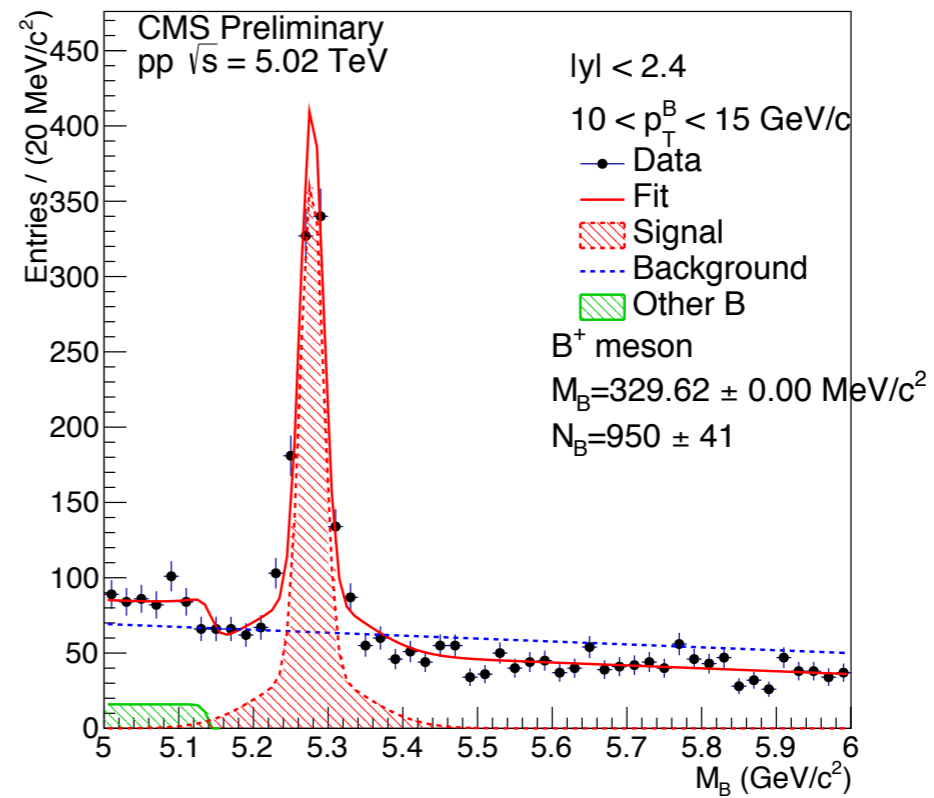
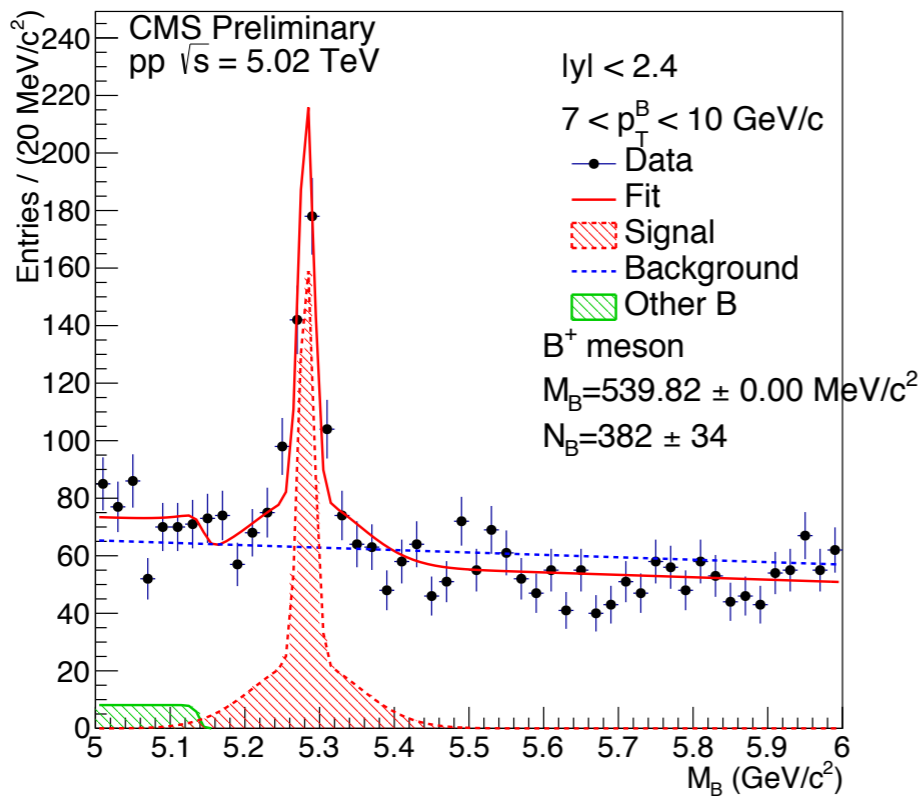
- Previously there was fall down shape at the edge
- Precut is applied before Kalman fitting to reduce operation time
- Previous mass precut is $5 < |m| < 6$
- Now mass precut is $4.5 < |m| < 6.5$

Bfinder mass distribution

pp



B analyzer mass distribution



back up

Peaking background from other B meson decay channel: Using the Inclusive B MC sample, we identify three components that can form peaking structure in the B+ mass spectrum.

1. $B^+ \rightarrow J/\psi + \pi$:

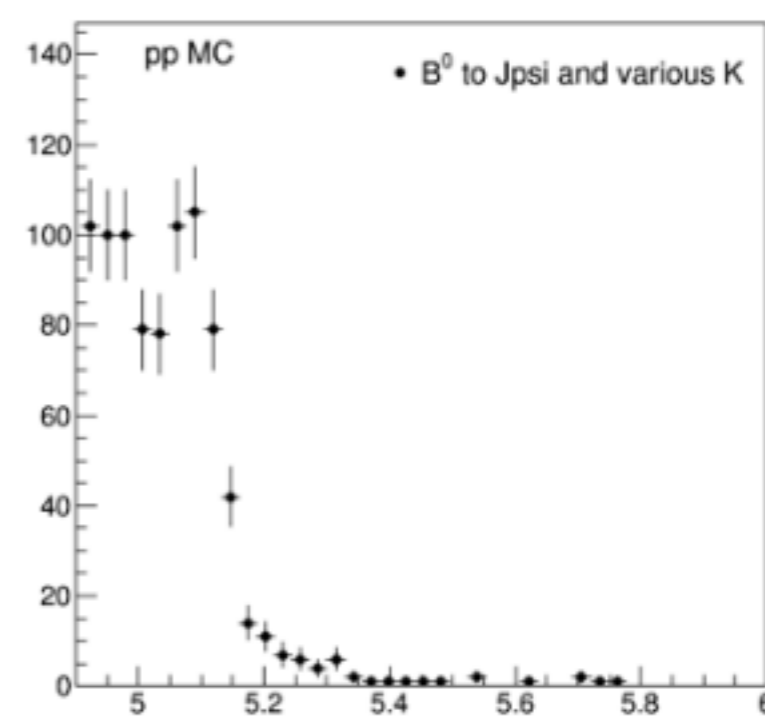
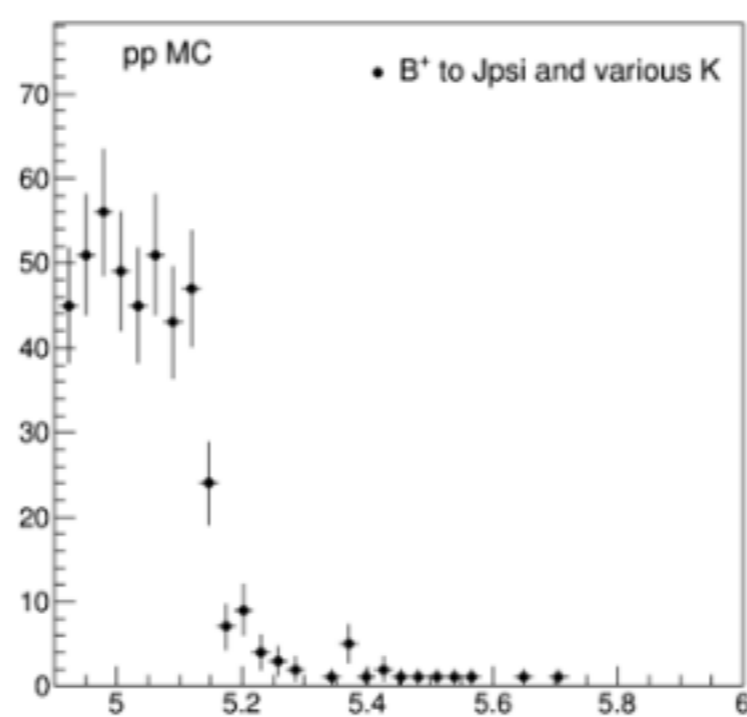
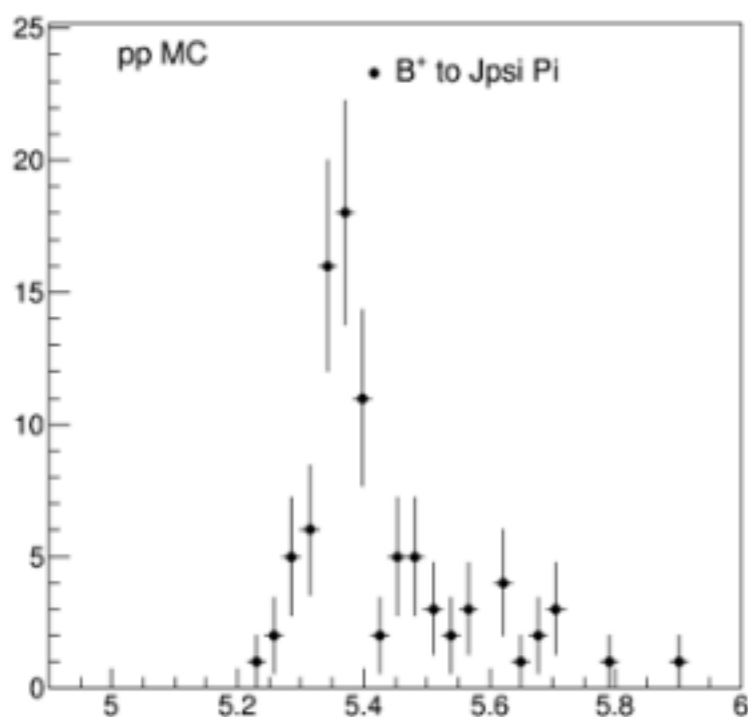
where the pion track is identify as a K^+ .

2. $B^+ \rightarrow J/\psi + K^*$: tracks

coming from the subsequent K^* , decay are incorrectly assumed to be coming from a genuine $B^+ \rightarrow J/\psi + K^+$

3. $B^0 \rightarrow J/\psi + K^*$, K^0 :

Same as case 2





Non-prompt contribution.



- Contribution coming from the first type is negligible as can be observed in the below mass fitting spectrum.
- Following CMS-PAS-BPH-15-004 (the pp 13 TeV B meson measurement.) we model the 2nd and 3rd type (which appear at the left end of the mass spectrum) together by a simple error function.
- We extract this PDF by fitting on the inclusive B MC with all the signal channel removed (B candidates gen-matched to $B^+ \rightarrow J/\psi + K^+$).

