J/ψ signal from pdst

Catherine Silvestre
Saclay

November 5, 2007

Outline

Setup

All runs available as pdst we used: 455 runs.
The list is available here:
`~silvestr/afs/muons_/work/fun4all_run7_AuAu/runlist_07-10-32.txt`

2 fits were used :

- double gaussian + exponential, as in PostCabanaboy;
- gaussian + exponential, as in PostCabanaboy

The slides show:

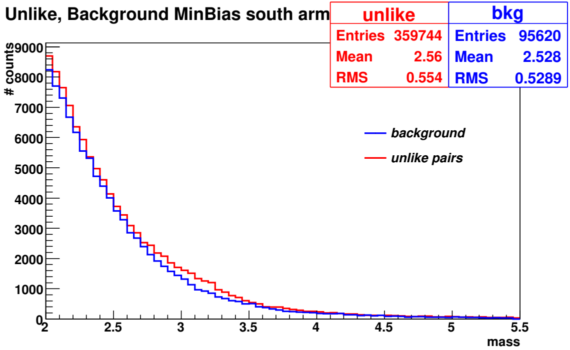
- Minbias signal in each arm
- the signal for centrality bins [60, 100] and the same got with run4 pdst
- the signal for each centrality bin for each arm

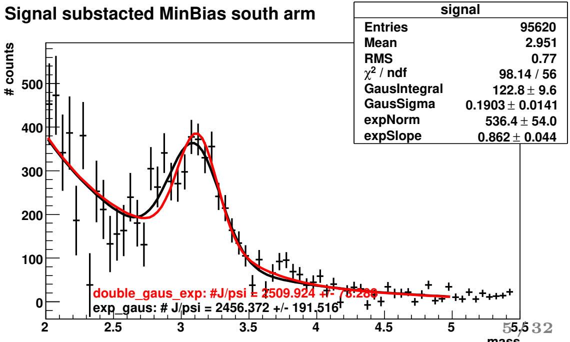
To be compared with the signal extraction from CB presented by Alex on the 19th of october 2007:
`http://www.phenix.bnl.gov/cdsagenda//askArchive.php?base=agenda&categ=a07494&id=a07494s1t0/transparencies/`

Outline

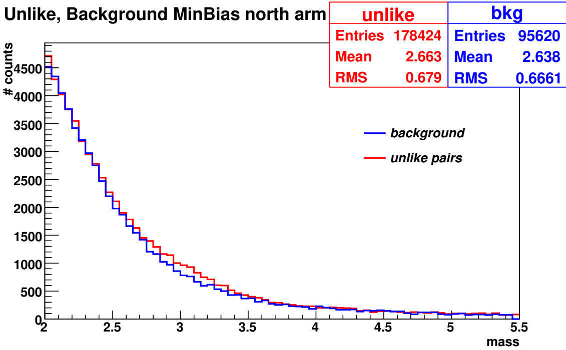
Min Bias South arm

gaus_exp sigma : 190 MeV
About 2400 +/- 191 J/ψ





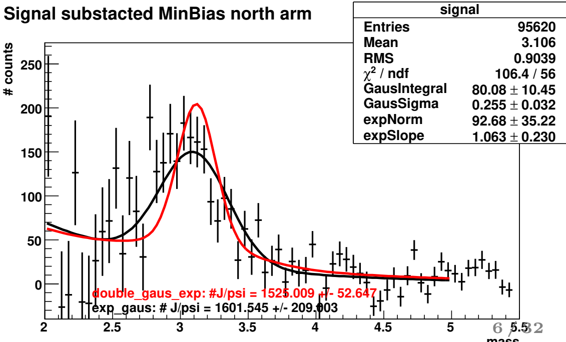
Min Bias North arm



Double gaussian fit misses peak.

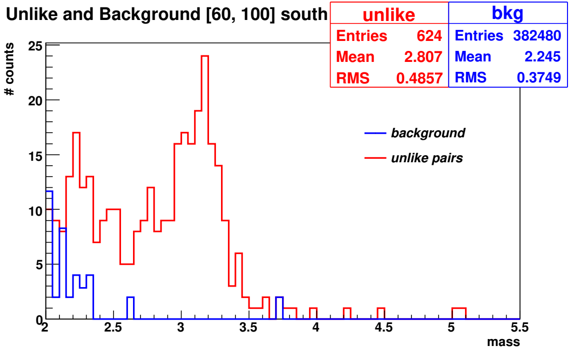
gaus_exp sigma : 255 MeV

About 1600 +/- 209 J/ψ

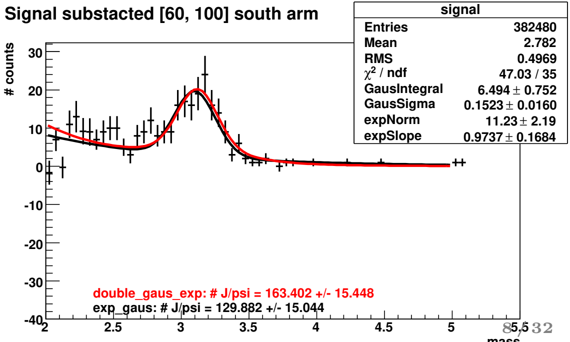


Outline

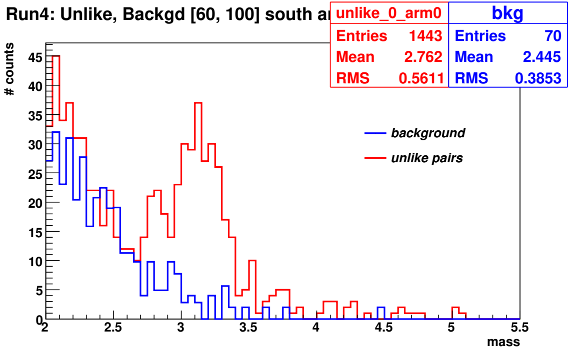
[60%, 100%] South



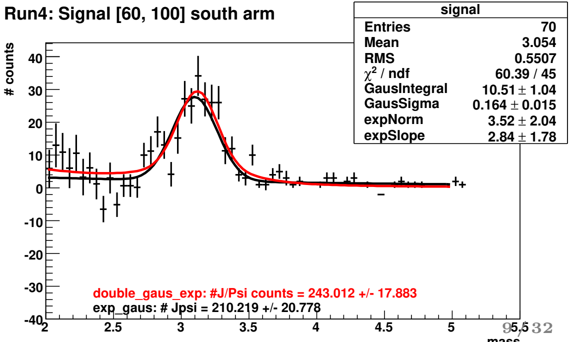
Almost half of the entries of Run 4 plot.
Not much background to do the substraction.
gaus_exp sigma : 152 MeV
About 129 +/- 15 J/ψ : almost half of run4.



Run 4 [60%, 100%] S

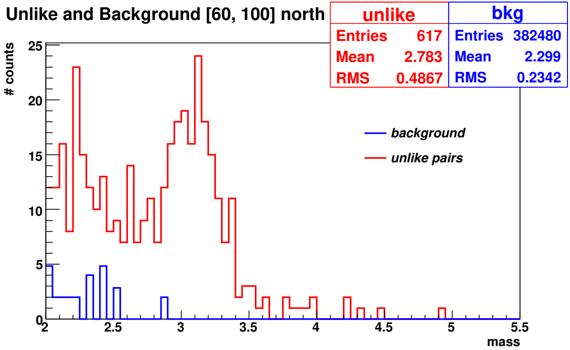


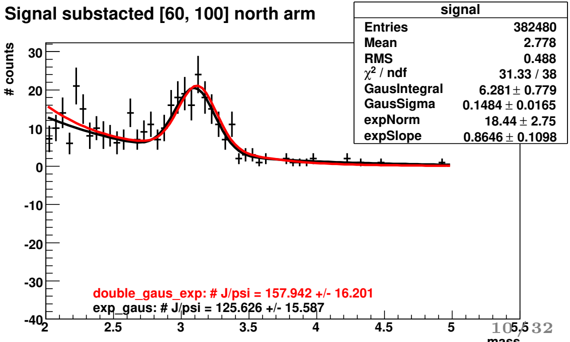
1443 entries vs 624 for run7.
gaus_exp sigma : 164 MeV
About 210 +/- 20 J/ψ



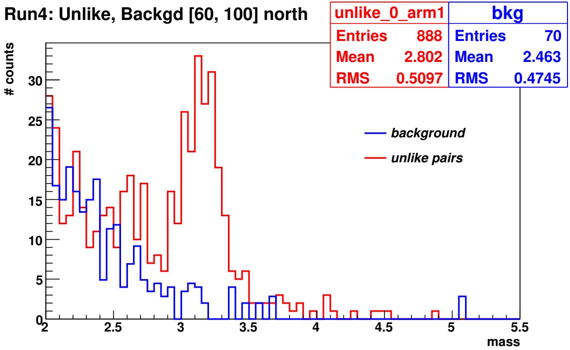
[60%, 100%] North

2/3 of the statistics of Run 4 plot.
gaus_exp sigma : 148 MeV
About 125 +/- 15 J/ψ (like south arm).





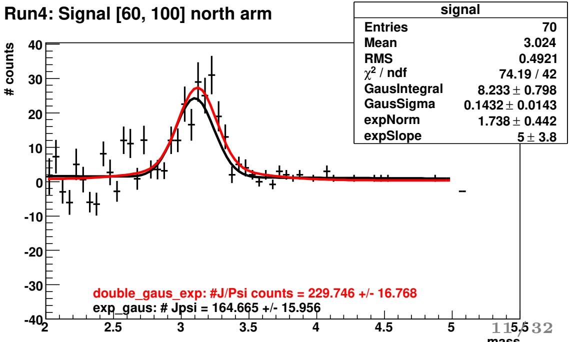
Run4 [60%, 100%] N



888 entries vs 617 for Run 7 plot.

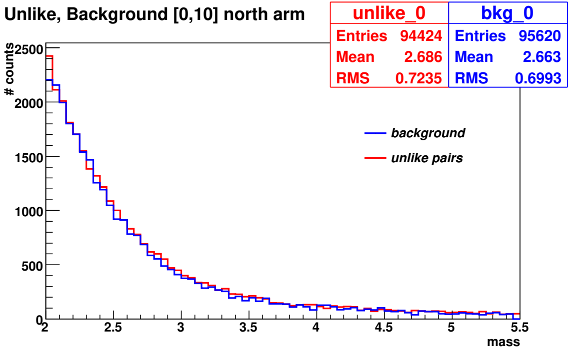
gaus_exp sigma : 143 MeV

About 164 +/- 15 J/ψ

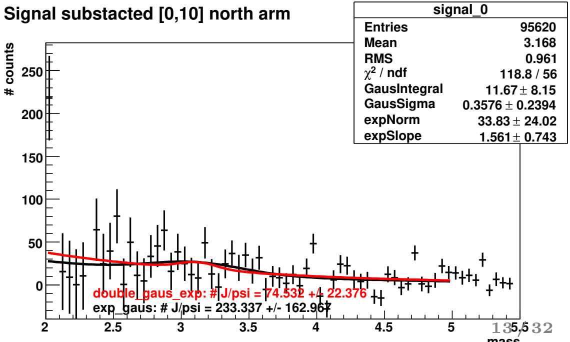


Outline

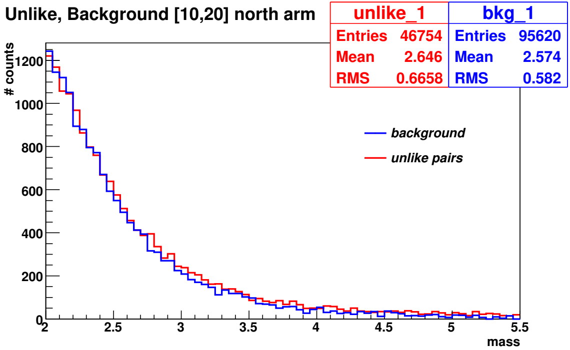
[0, 10] North arm



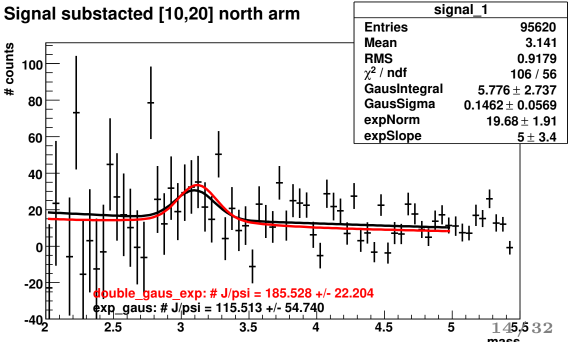
No signal.



[10, 20] North arm

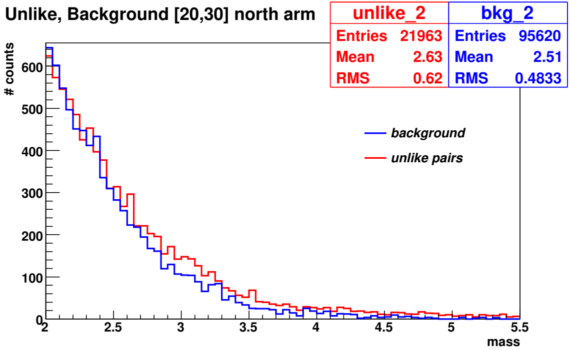


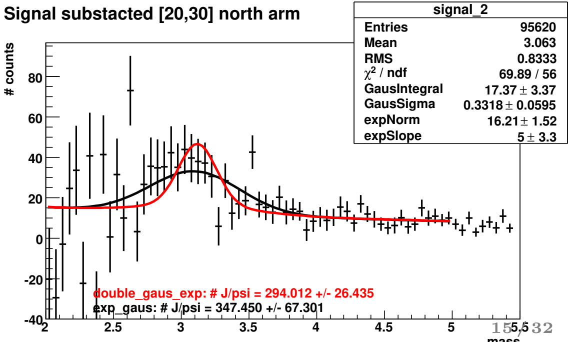
No signal.



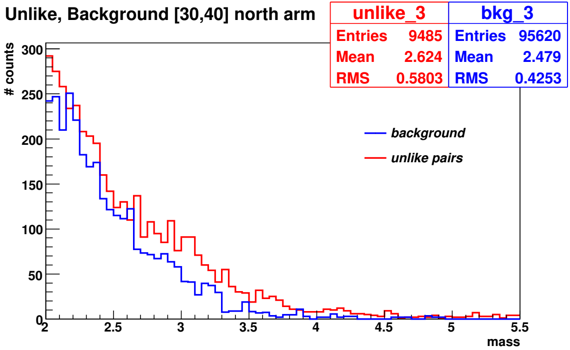
[20, 30] North arm

No signal.

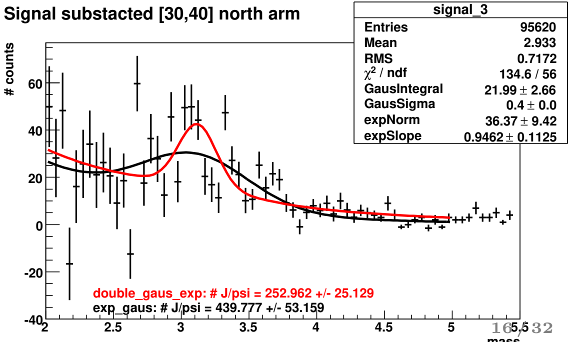




[30, 40] North arm

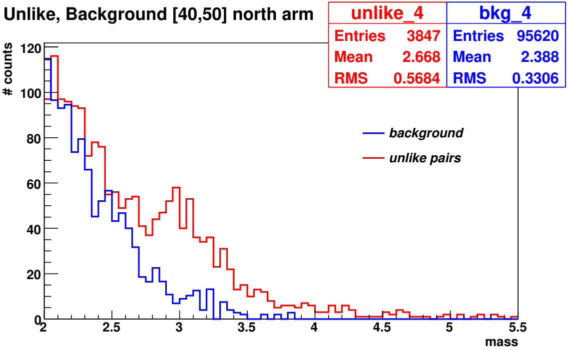


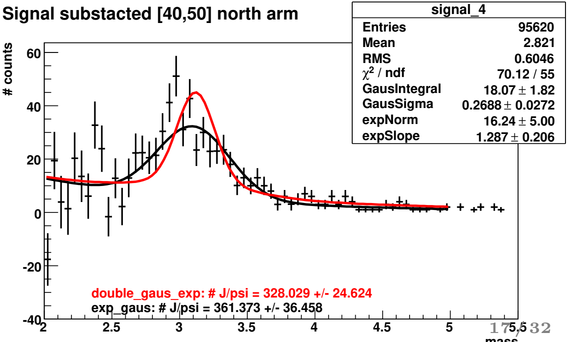
Substraction doesn't work for this bin.



[40, 50] North arm

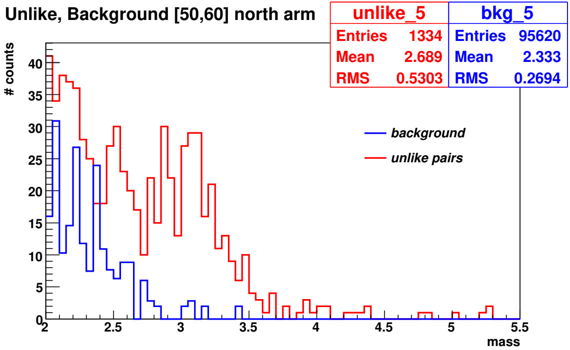
The fits miss the peak (which seems shifted to 3 GeV).

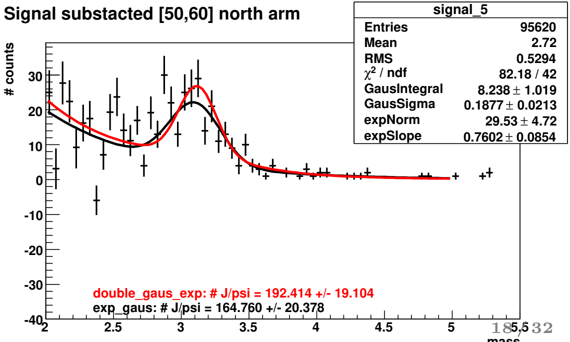




[50, 60] North arm

Background too poor for the substraciton to work...

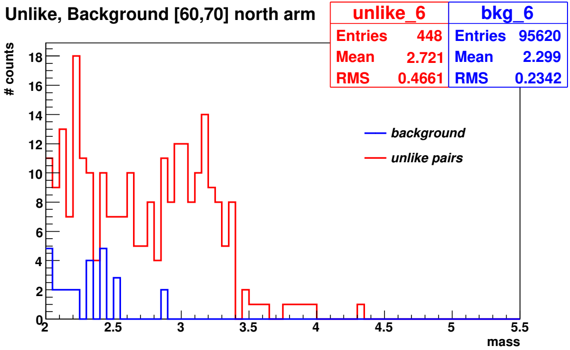


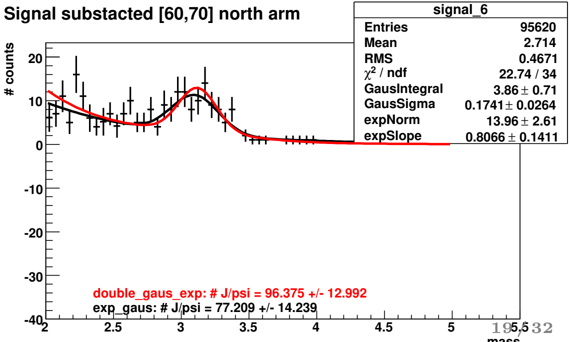


[60, 70] North arm

sigma 174 MeV

77 J/ψ +/- 14



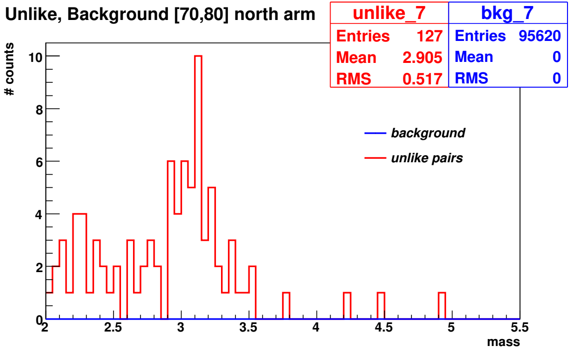


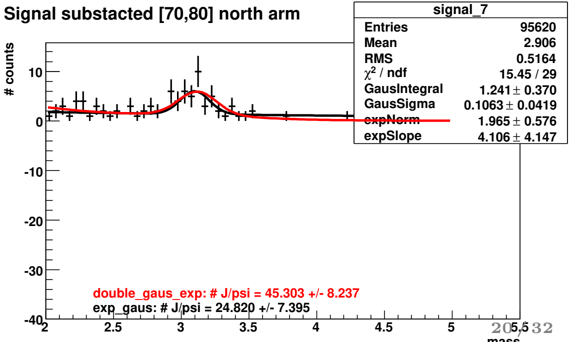
[70, 80] North arm

No background count.

sigma 106 MeV

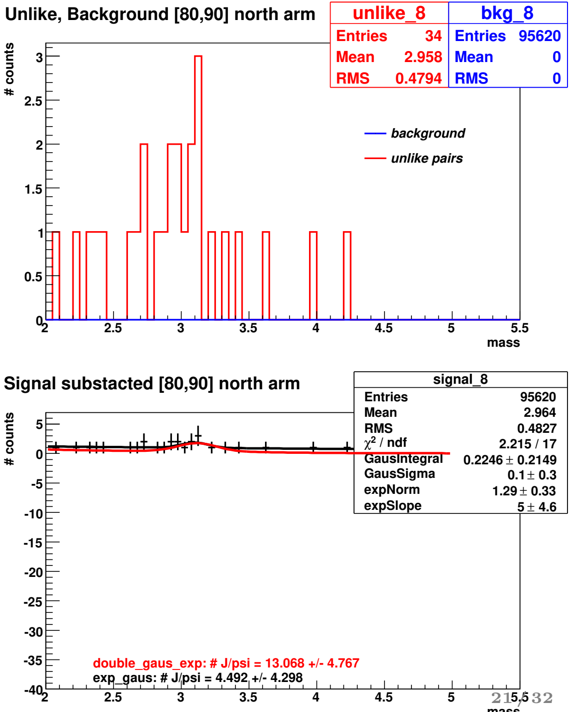
24 J/ψ +/- 7





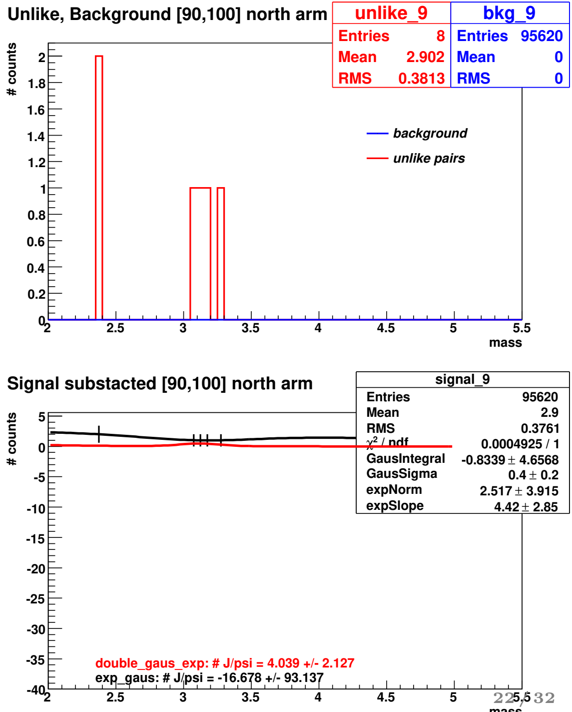
[80, 90] North arm

No signal.

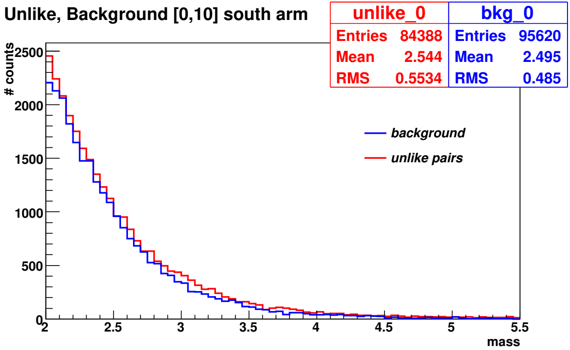


[90, 100] North arm

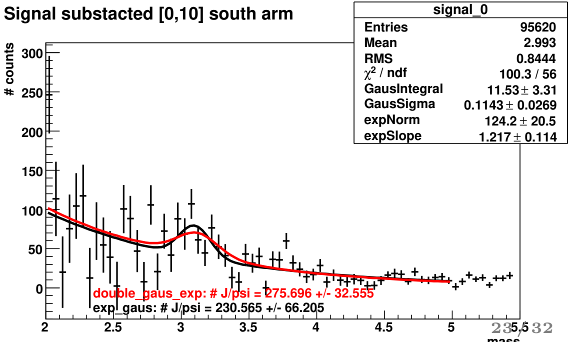
No signal.



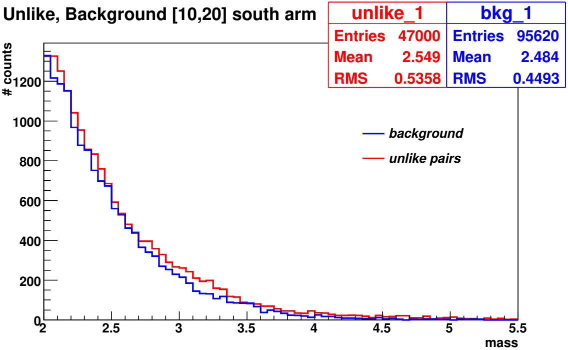
[0, 10] South arm



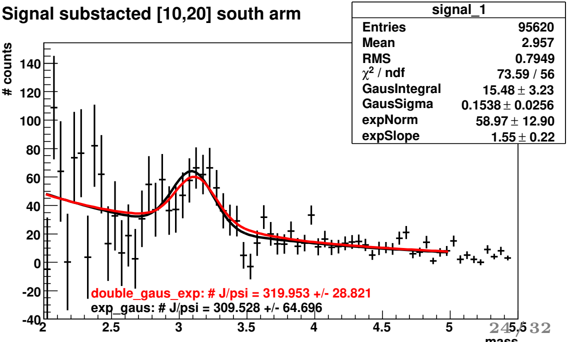
No count.



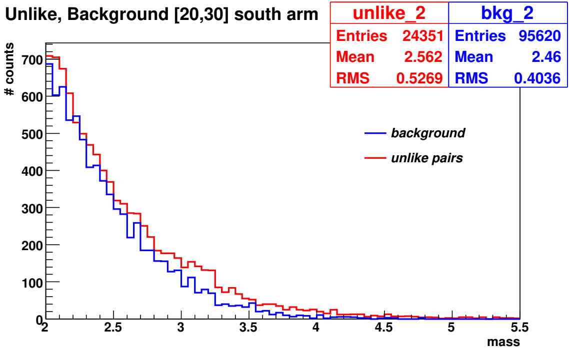
[10, 20] South arm



Substraction didn't work: no peak.

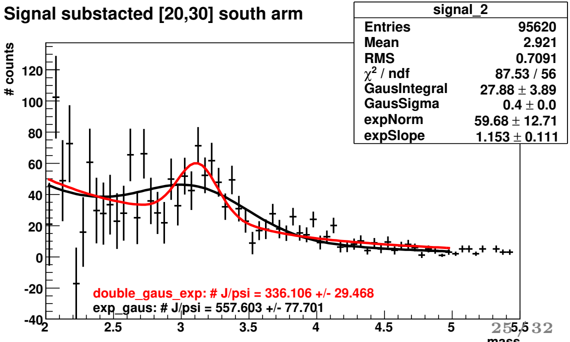


[20, 30] South arm



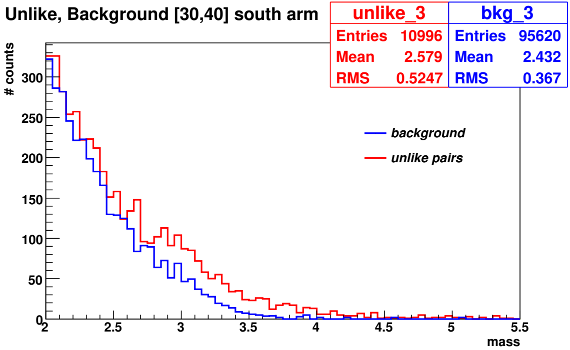
sigma 153 MeV

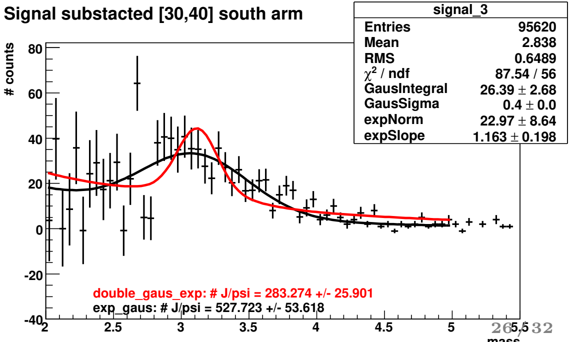
309 J/ψ +/-64



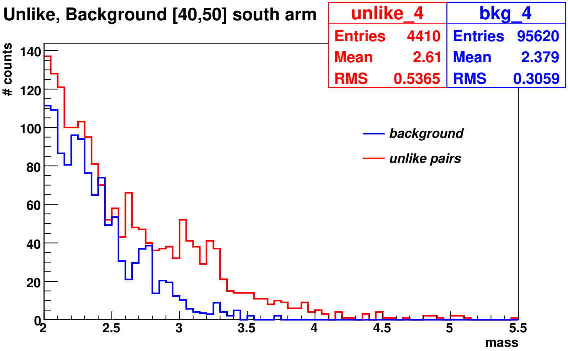
[30, 40] South arm

Signal not clear from the substraction.

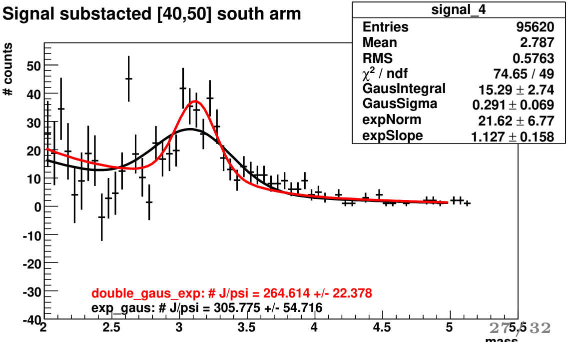




[40, 50] South arm

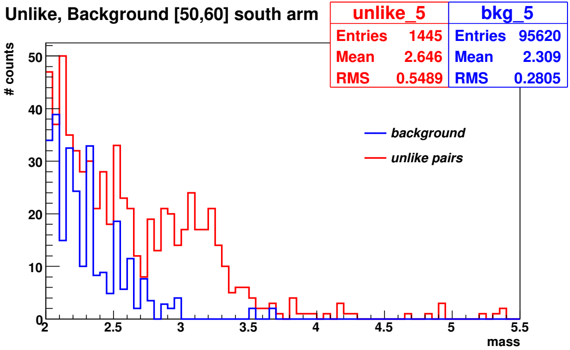


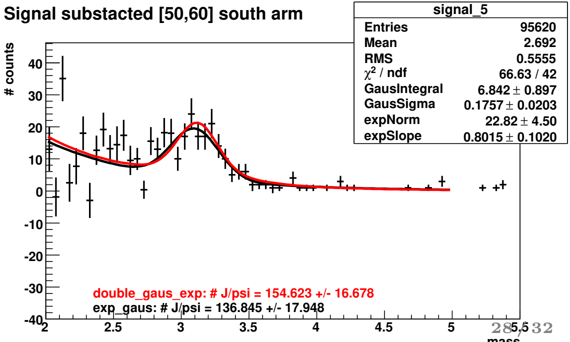
Double gaussian fit beeter:
264 J/ψ +/- 22



[50, 60] South arm

No background below the signal ?
sigma 175 MeV
136 +/- 17 J/ψ

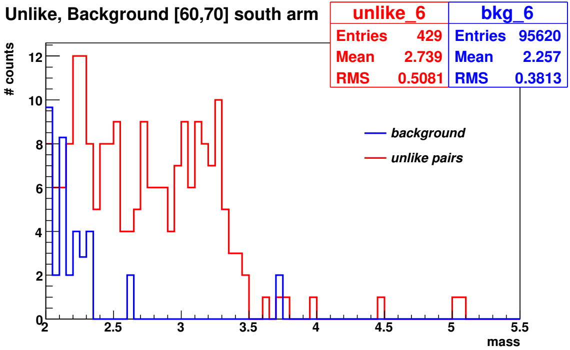


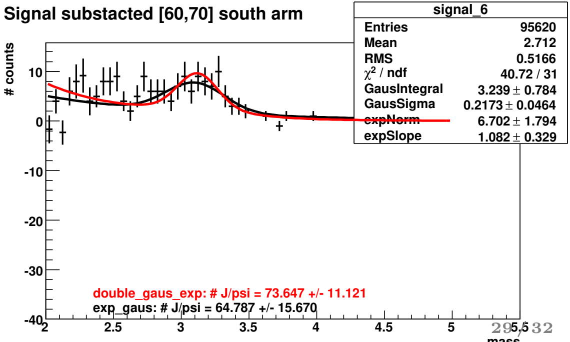


[60, 70] South arm

sigma 217 MeV

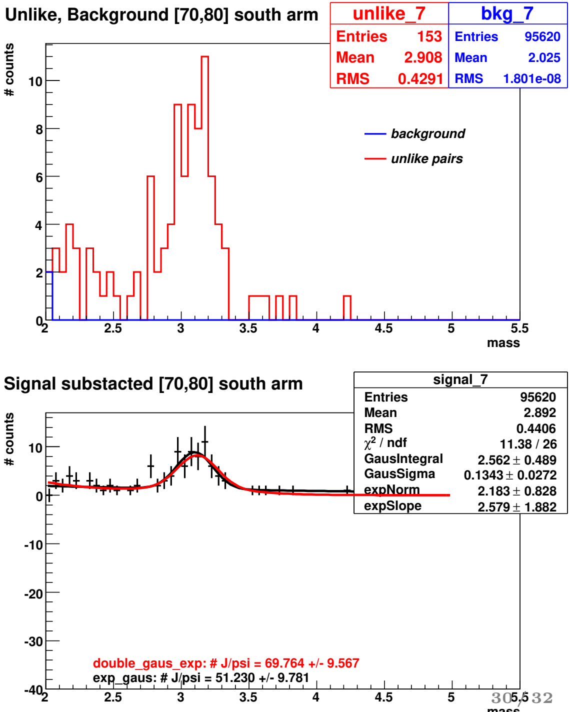
64 +/- 15 J/ψ



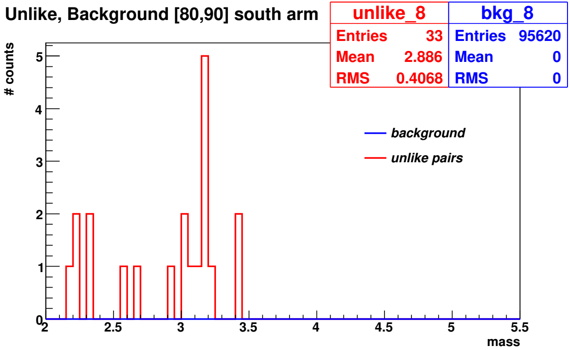


[70, 80] South arm

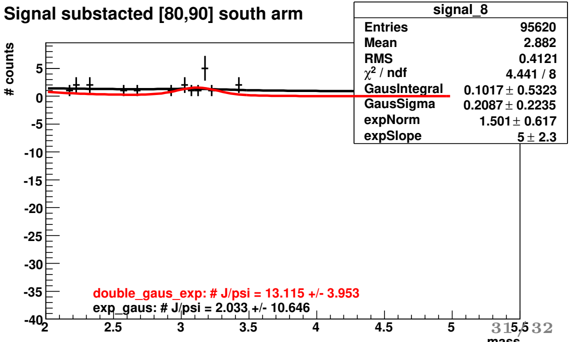
No background
sigma 134 MeV
51 +/- 9 J/ψ



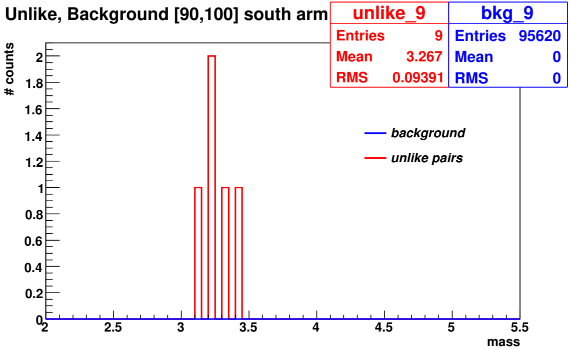
[80, 90] South arm



No signal



[90, 100] South arm



No signal.