

Boss version: 664p03

Dataset: 1 million signal MC (09)

09 data

09 inclusive MC

```
Decay psi(2S)
1.0 Lambda0 anti-Lambda0 eta' PHSP;
Enddecay

Decay Lambda0
1.0 p+ pi- PHSP;
Enddecay

Decay anti-Lambda0
1.0 anti-p- pi+ PHSP;
Enddecay

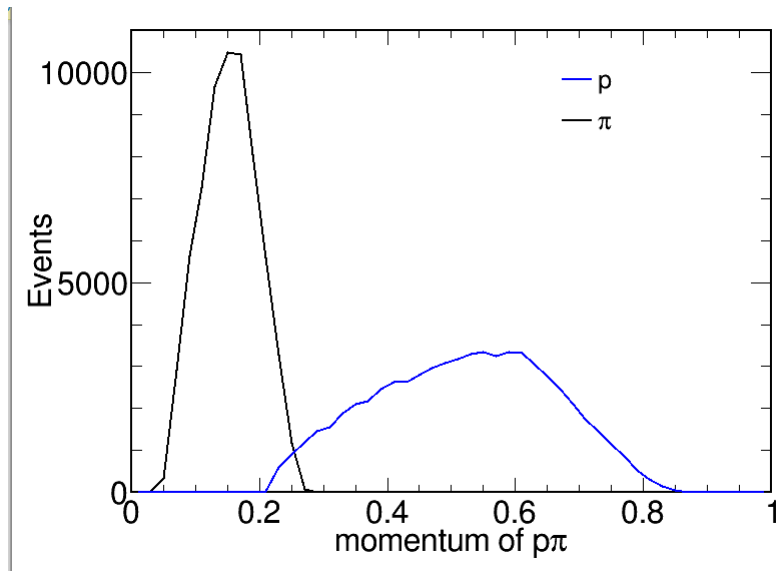
Decay eta'
1.0 gamma pi+ pi- PHSP;
Enddecay

End
```

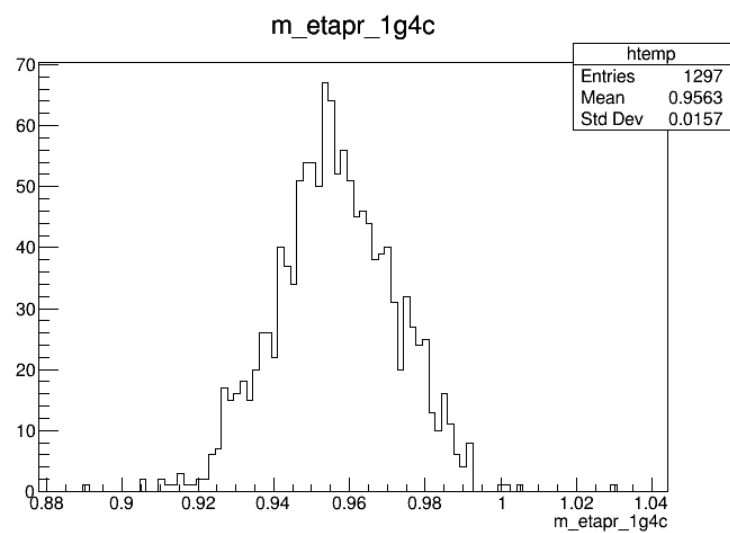
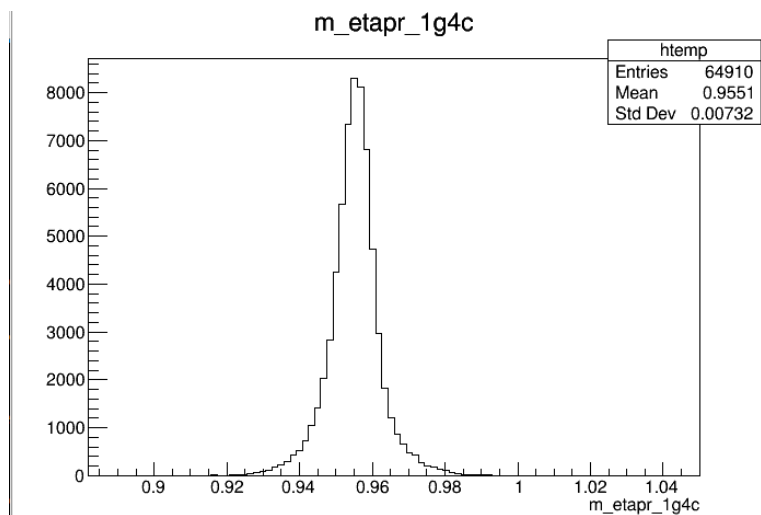
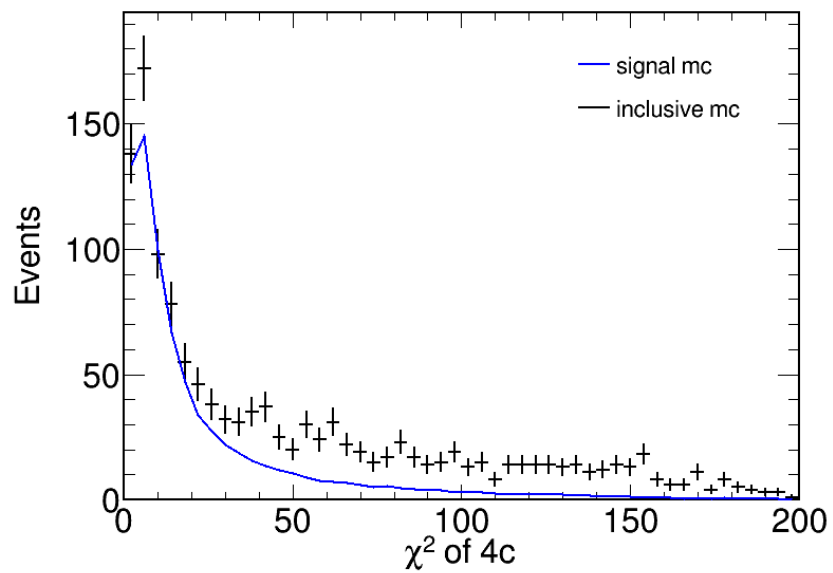
Event selection

- Charged track :
 1. At least 3 positive and 3 negative charged track;
 2. Polar angle of each track in MDC: $|\cos \theta| < 0.93$;
- Good shower:
 1. Shower energy: $E_\gamma > 25\text{MeV}$ for the barrel EMC ($|\cos \theta| < 0.8$), $E_\gamma > 50\text{MeV}$ for the endcap EMC ($0.86 < |\cos \theta| < 0.92$) ;
 2. Opening angle between shower and the nearest charged track $> 10^\circ$;
 3. $N_{\text{shower}} \geq 1$;
- PID: $\text{prob}(p) > \text{prob}(\pi) \&\& \text{prob}(p) > \text{prob}(K)$, set PID p;
- Vertex fit:
 1. At least one $p\pi^-$ and one $p^-\pi^+$ candidate are required to pass the $\Lambda(\bar{\Lambda})$ vertex fit successfully by looping over all the combinations of positive and negative charged tracks. the one with minimum value of $\sqrt{(M_{p\pi} - M_\Lambda)^2}$ is retained;
- 4C Kinematic fit(1 gamma): constrain to $\psi(2s)$'s four momenta;
- 5C Kinematic fit(1 gamma): 1C for η' nominal mass, 4C for $\psi(2s)$'s four momenta;
- 4C Kinematic fit(2 gamma);

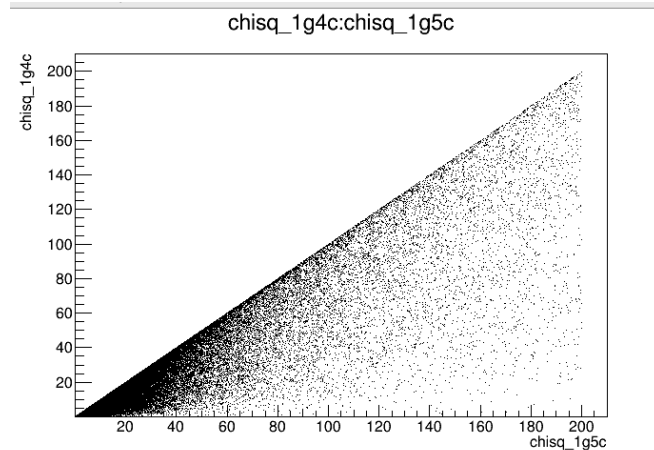
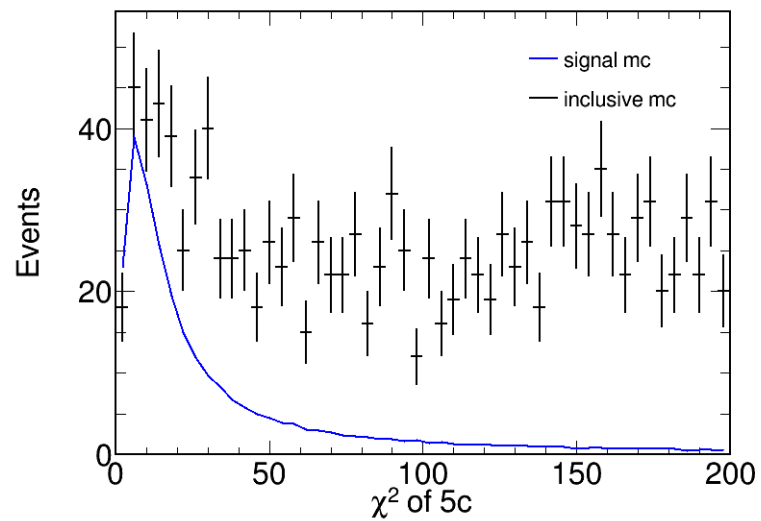
Vertex fit



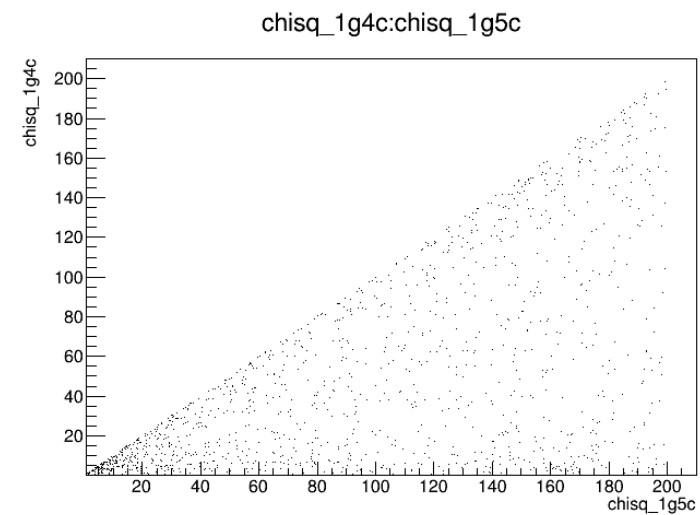
4c fit (1 gamma)



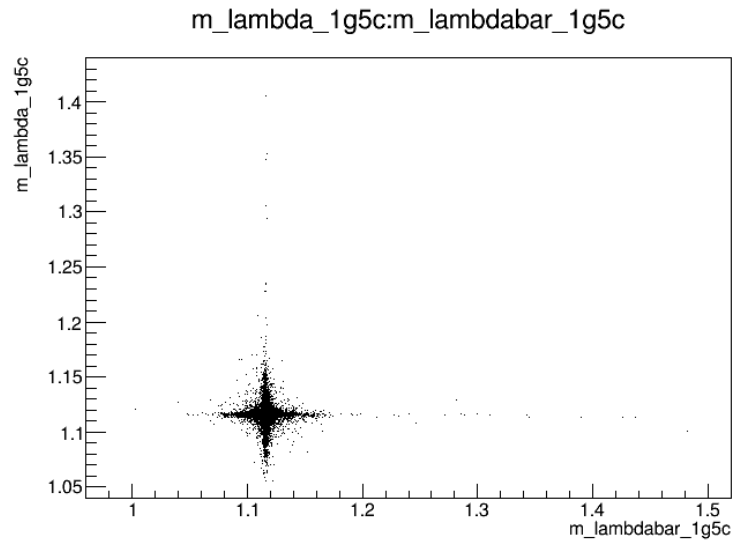
5c fit



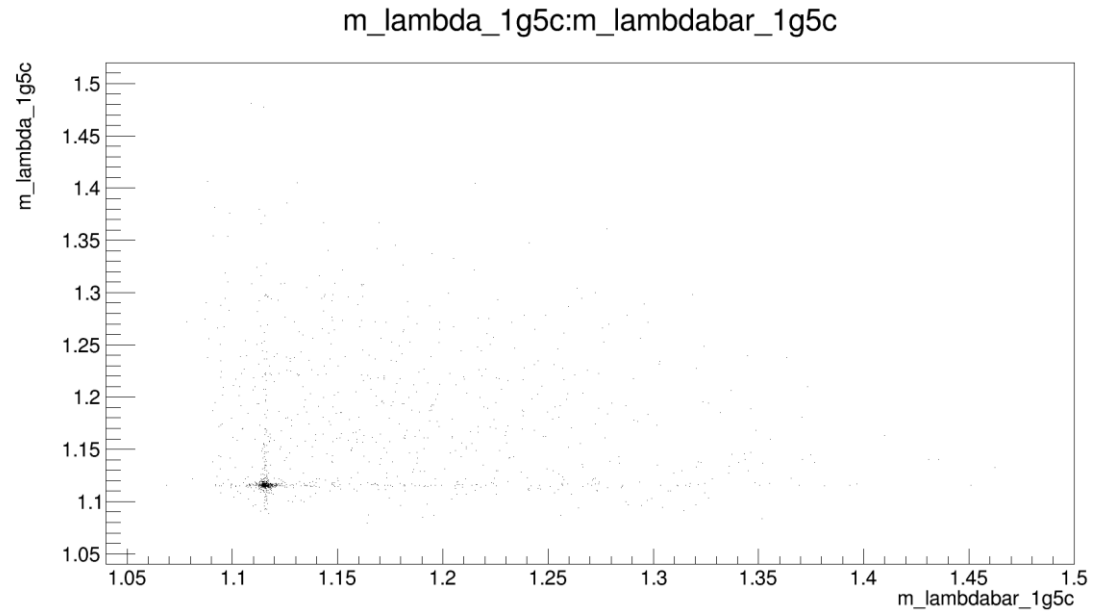
Signal mc



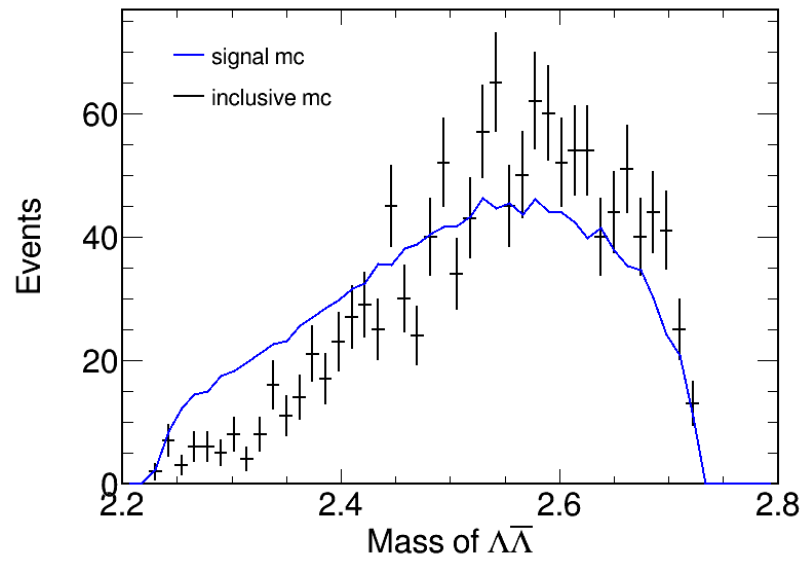
Inclusive mc



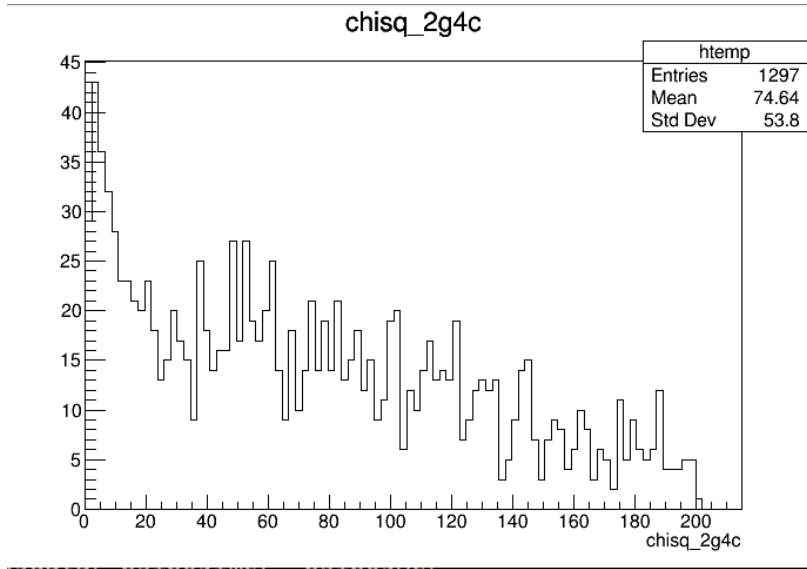
Signal mc



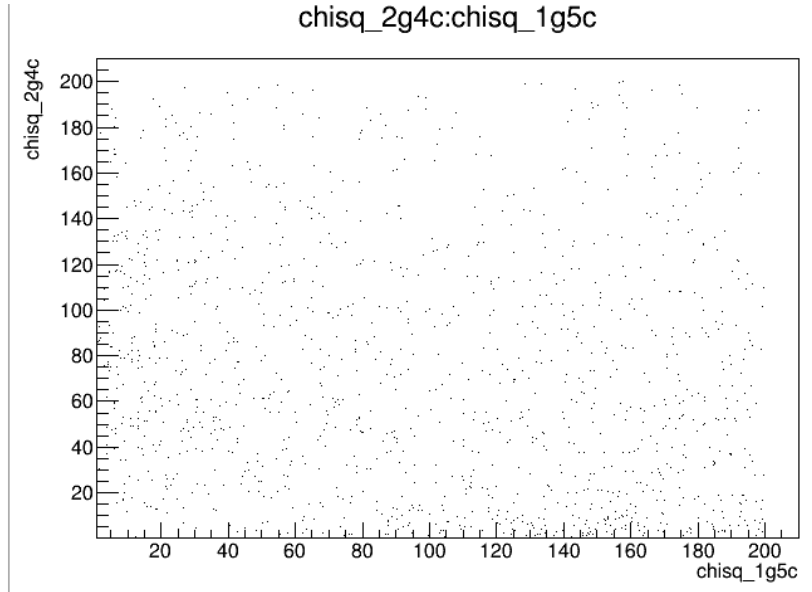
Inclusive mc



4c fit (2 gamma)



Inclusive mc



Inclusive mc