

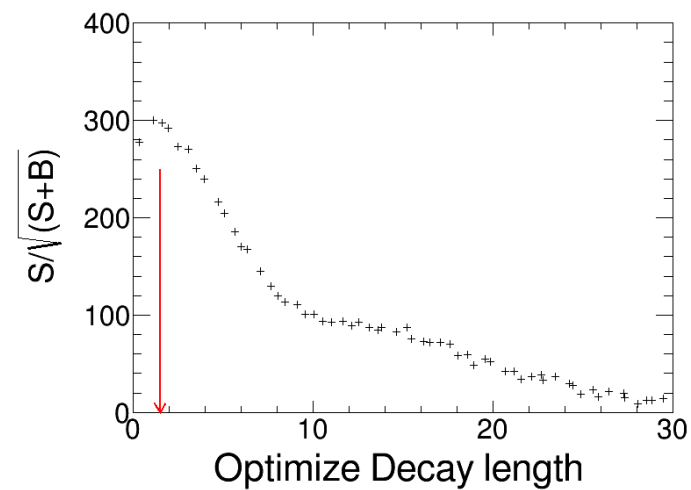
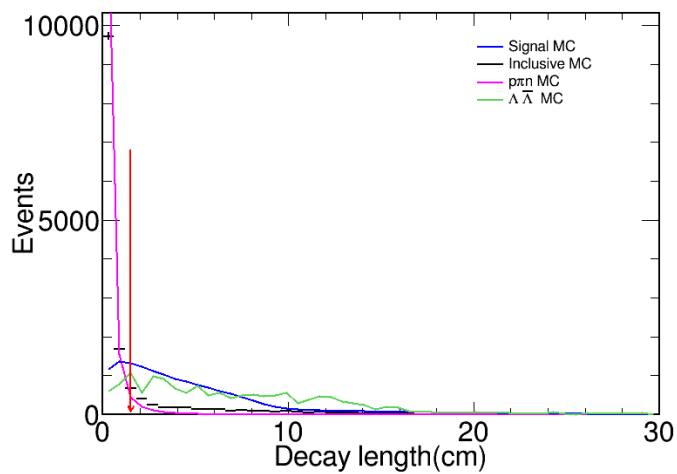
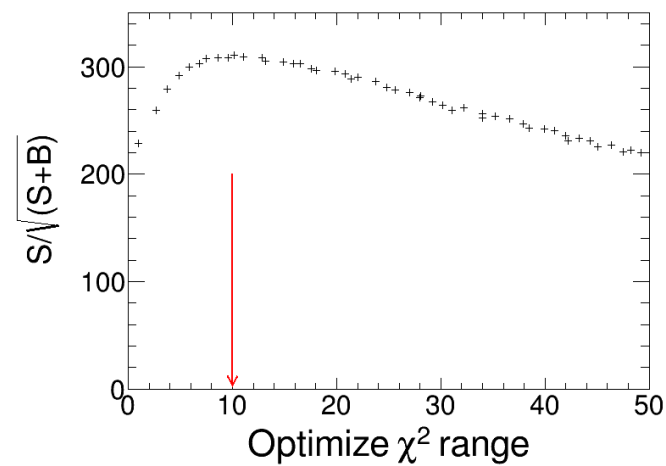
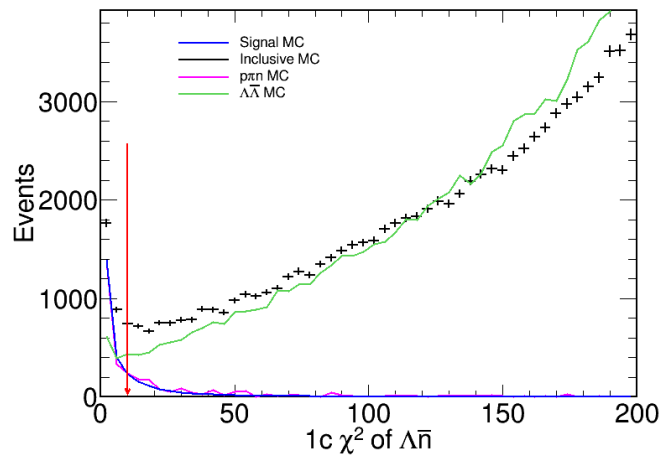
$J/\psi \rightarrow \Lambda \bar{n}$

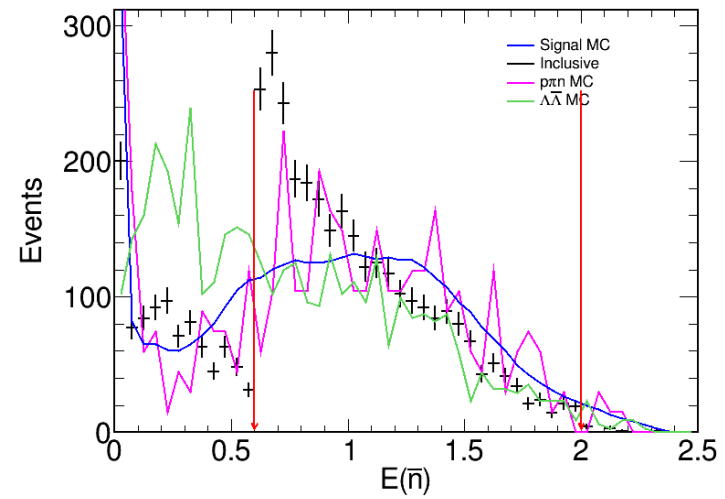
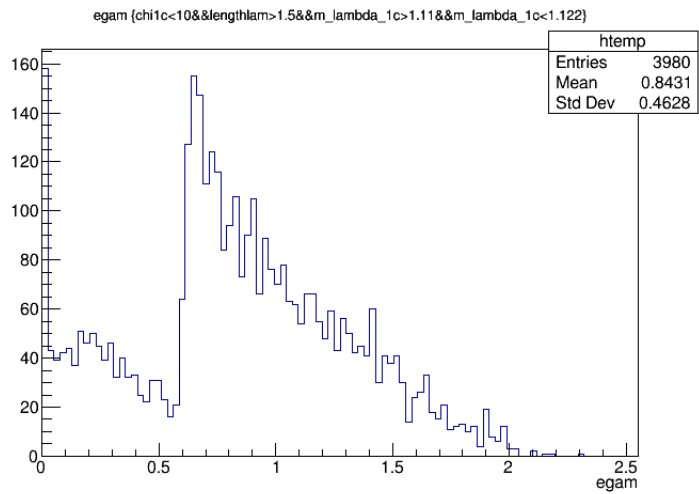
Cut:  $\text{chisq} (1c) < 10$

$0.6 < E(n) < 2 \text{ Gev}$

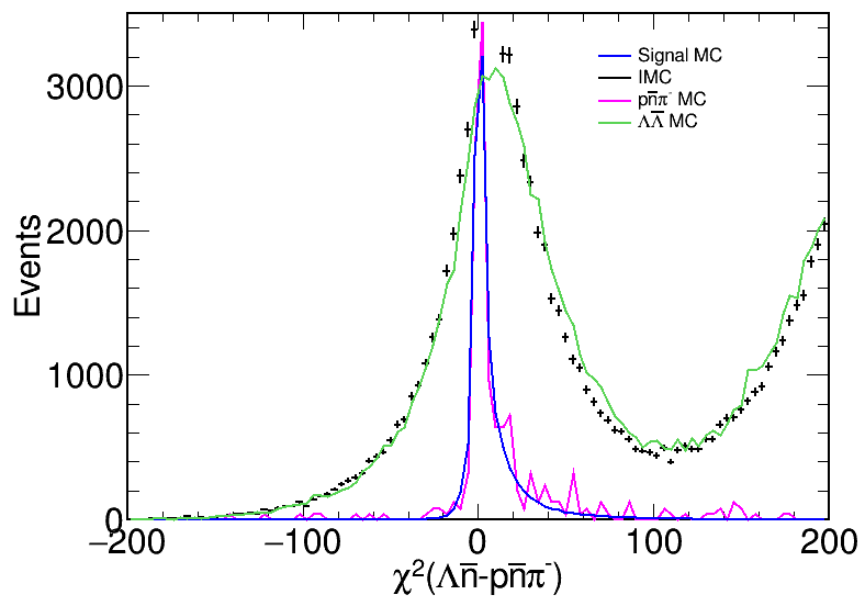
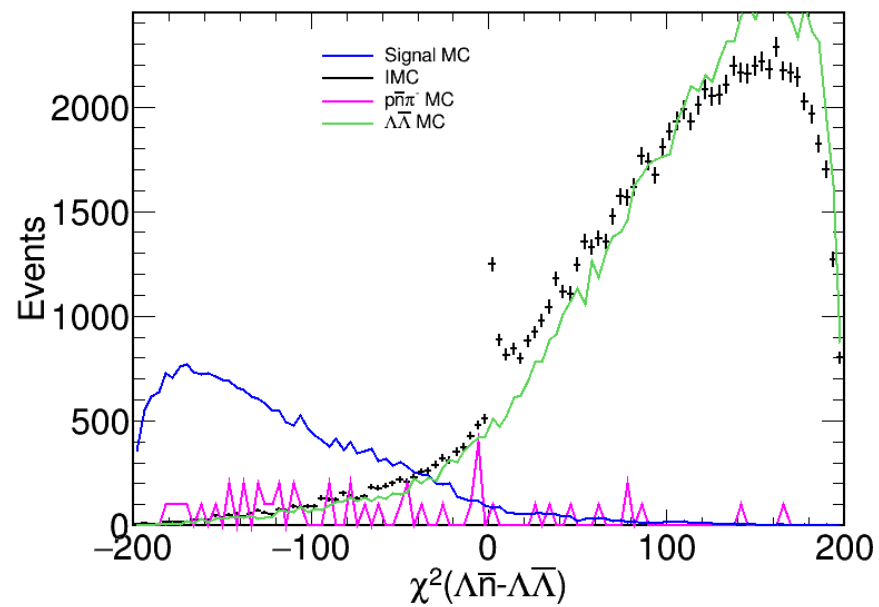
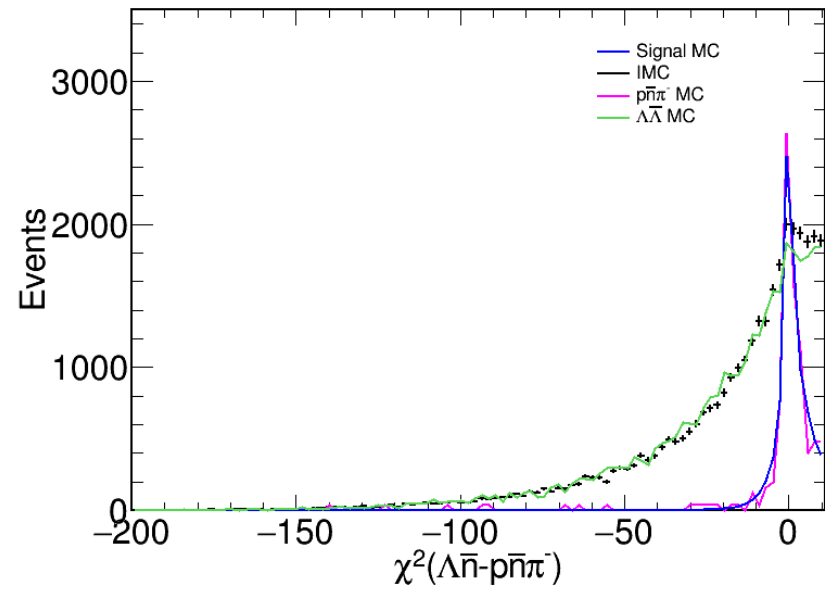
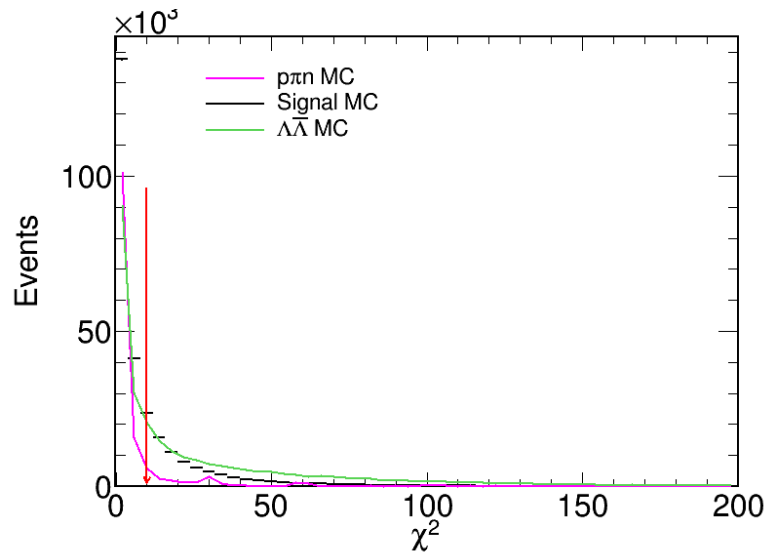
Decay Length  $> 1.5 \text{ cm}$

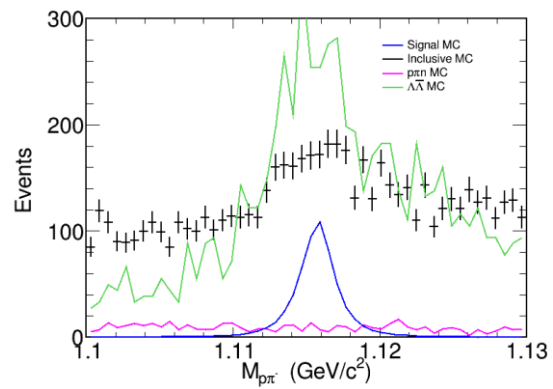
$M(\Lambda) : (1.11, 1.122)$



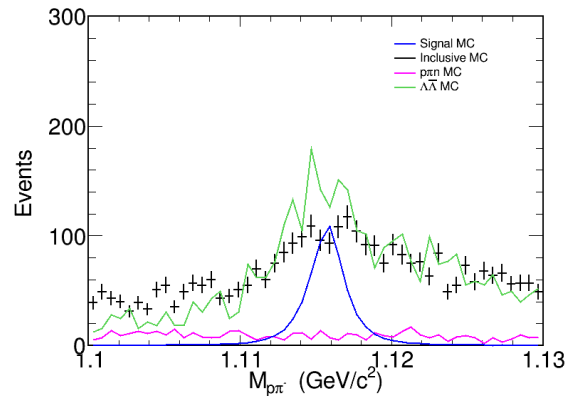


Deposit energy of EMC

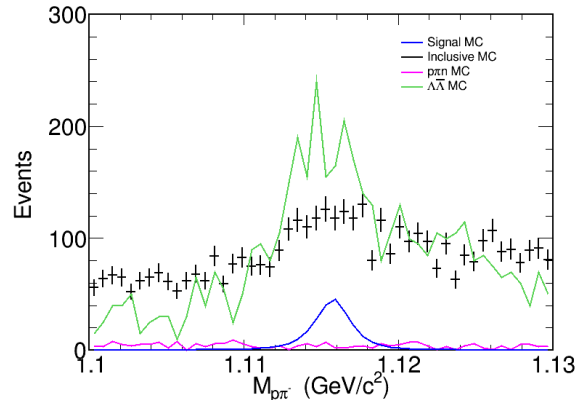




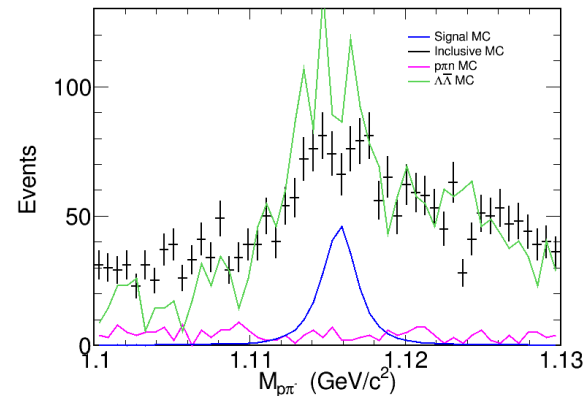
No cut



Cut  $\chi^2(\Lambda\bar{n}) < \chi^2(\Lambda\bar{\Lambda})$



$\chi^2(\Lambda\bar{n}) < \chi^2(p\pi\pi)$



Cut  $\chi^2(\Lambda\bar{n}) < \chi^2(\Lambda\bar{\Lambda})$   
 $\chi^2(\Lambda\bar{n}) < \chi^2(p\pi\pi)$

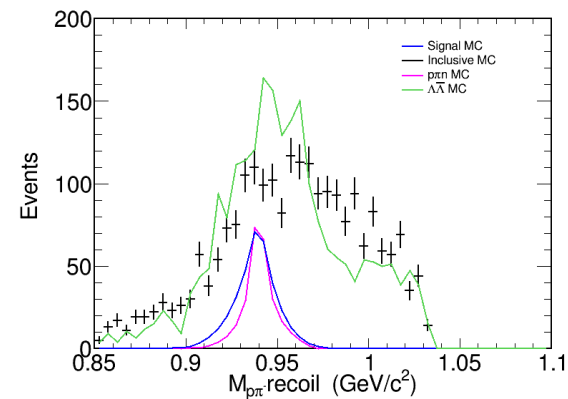
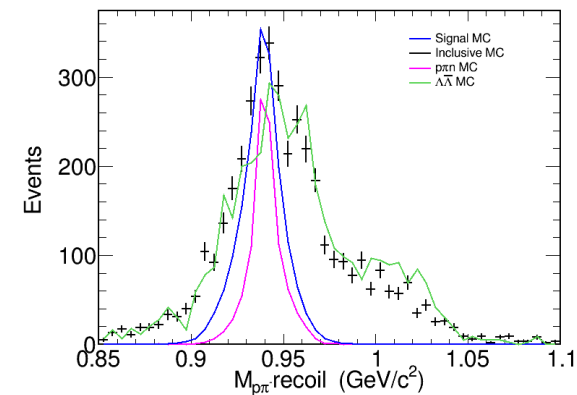
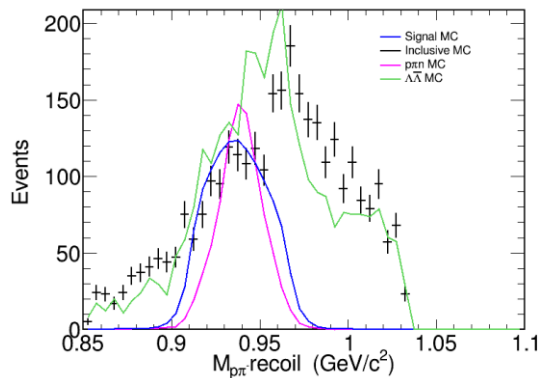
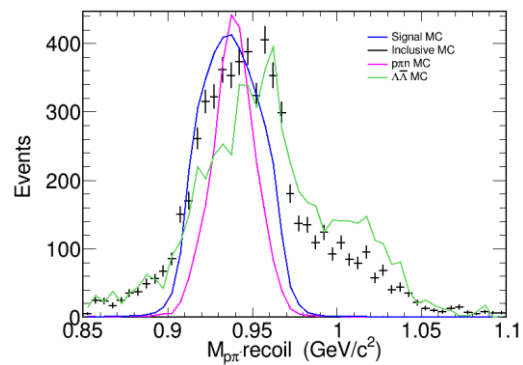


Table 1: Decay trees and their respective final states.

rowNo	decay tree	decay final state	iDcyTr	nEtr	nCEtr
1	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^0 \bar{n}$	$\pi^0 \pi^- \bar{n} p$	0	615	615
2	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^0 n, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^0 \pi^+ n \bar{p}$	1	153	768
3	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^+ \pi^- p \bar{p}$	17	87	855
4	$J/\psi \rightarrow \pi^- \bar{n} p$	$\pi^- \bar{n} p$	2	22	877
5	$J/\psi \rightarrow \pi^0 K_L^0 K_S^0, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^0 K_L^0 \pi^+ \pi^-$	9	12	889
6	$J/\psi \rightarrow \pi^+ n \bar{p}$	$\pi^+ n \bar{p}$	13	10	899
7	$J/\psi \rightarrow \Sigma^0 \bar{\Sigma}^0, \Sigma^0 \rightarrow \Lambda \gamma, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^0 \bar{n}$	$\pi^0 \pi^- \bar{n} p \gamma \gamma$	116	10	909
8	$J/\psi \rightarrow \pi^0 \pi^+ \pi^- K^+ K^-$	$\pi^0 \pi^+ \pi^- K^+ K^-$	84	8	917
9	$J/\psi \rightarrow \pi^0 \pi^0 \pi^0 \pi^+ \pi^-$	$\pi^0 \pi^0 \pi^0 \pi^+ \pi^-$	25	7	924
10	$J/\psi \rightarrow \pi^0 \pi^0 K_L^0 K_S^0, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^0 \pi^0 K_L^0 \pi^+ \pi^-$	61	6	930
11	$J/\psi \rightarrow \pi^+ K^* K^{*-}, K^* \rightarrow \pi^- K^+, K^{*-} \rightarrow \pi^0 K^-$	$\pi^0 \pi^+ \pi^- K^+ K^-$	63	6	936
12	$J/\psi \rightarrow \Sigma^0 \bar{\Sigma}^0, \Sigma^0 \rightarrow \Lambda \gamma, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \Lambda \rightarrow \pi^0 n, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^0 \pi^+ n \bar{p} \gamma \gamma$	85	5	941
13	$J/\psi \rightarrow \pi^0 \pi^0 \pi^+ \pi^+ \pi^- \pi^-$	$\pi^0 \pi^0 \pi^+ \pi^+ \pi^- \pi^-$	11	5	946
14	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^0 \bar{n}, \pi^0 \rightarrow e^+ e^- \gamma^F$	$e^+ e^- \pi^- \bar{n} p \gamma^F$	57	4	950
15	$J/\psi \rightarrow \Sigma^0 \bar{\Sigma}^0, \Sigma^0 \rightarrow \Lambda \gamma, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^+ \pi^- p \bar{p} \gamma \gamma$	6	4	954
16	$J/\psi \rightarrow \pi^0 \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^-$	$\pi^0 \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^-$	40	4	958
17	$J/\psi \rightarrow \Lambda \bar{\Lambda} \gamma, \Lambda \rightarrow \pi^0 n, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^0 \pi^+ n \bar{p} \gamma$	44	3	961
18	$J/\psi \rightarrow \pi^+ \eta K_S^0 K^-, \eta \rightarrow \pi^0 \pi^0 \pi^0, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^0 \pi^0 \pi^0 \pi^+ \pi^+ \pi^- K^-$	51	3	964
19	$J/\psi \rightarrow K^- K_1'^+, K_1'^+ \rightarrow \pi^0 K^{*+}, K^{*+} \rightarrow \pi^+ K^0, K^0 \rightarrow K_S^0, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^0 \pi^+ \pi^+ \pi^- K^-$	19	3	967
20	$J/\psi \rightarrow \pi^- \bar{K}^* K^{*+}, \bar{K}^* \rightarrow \pi^+ K^-, K^{*+} \rightarrow \pi^+ K^0, K^0 \rightarrow K_S^0, K_S^0 \rightarrow \pi^0 \pi^0$	$\pi^0 \pi^0 \pi^+ \pi^+ \pi^- K^-$	23	3	970

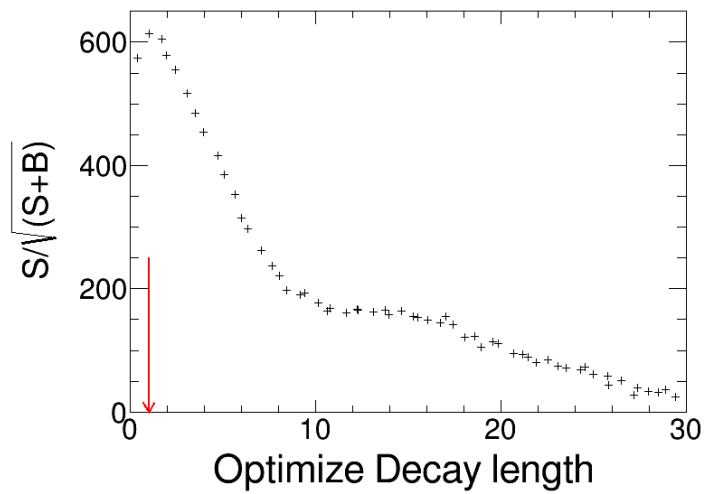
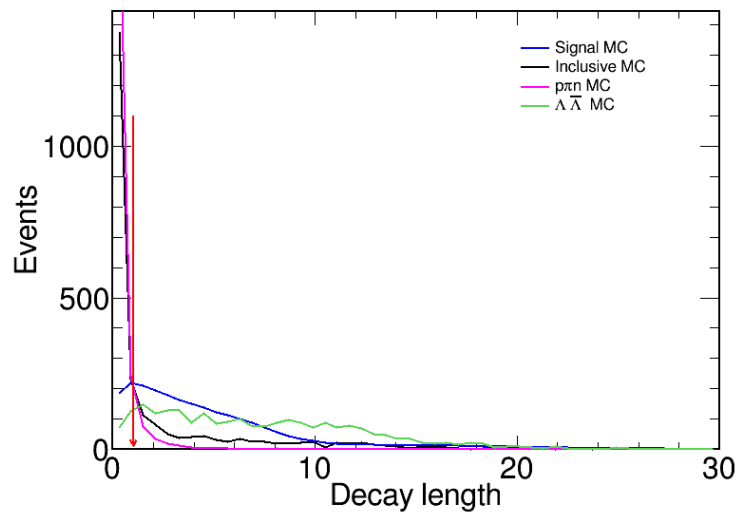
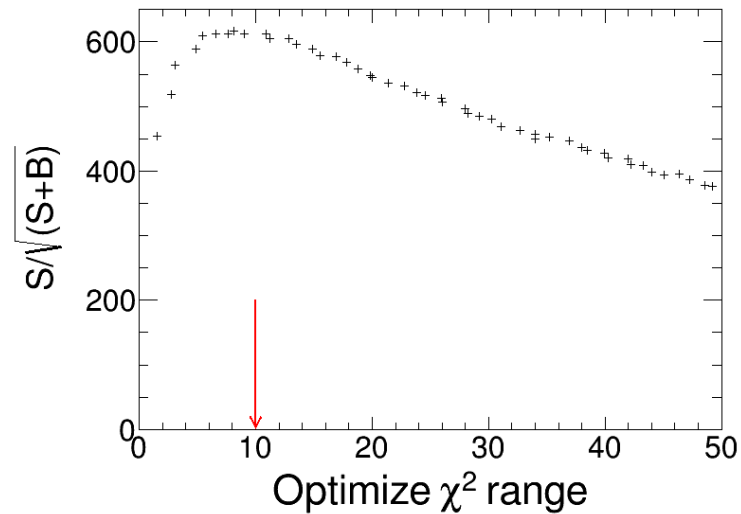
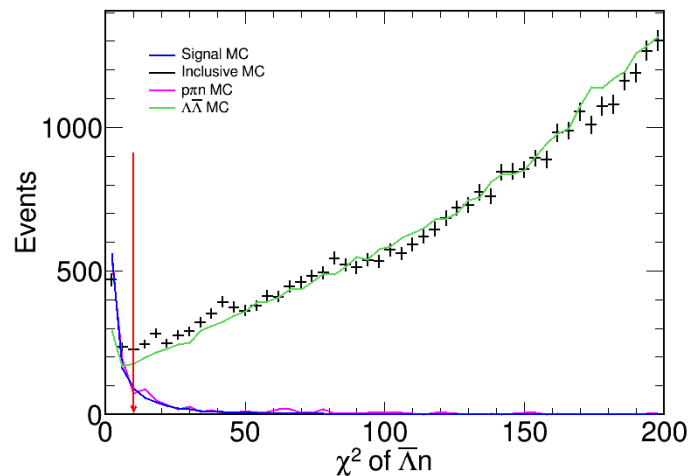
$J/\psi \rightarrow \bar{\Lambda}n$

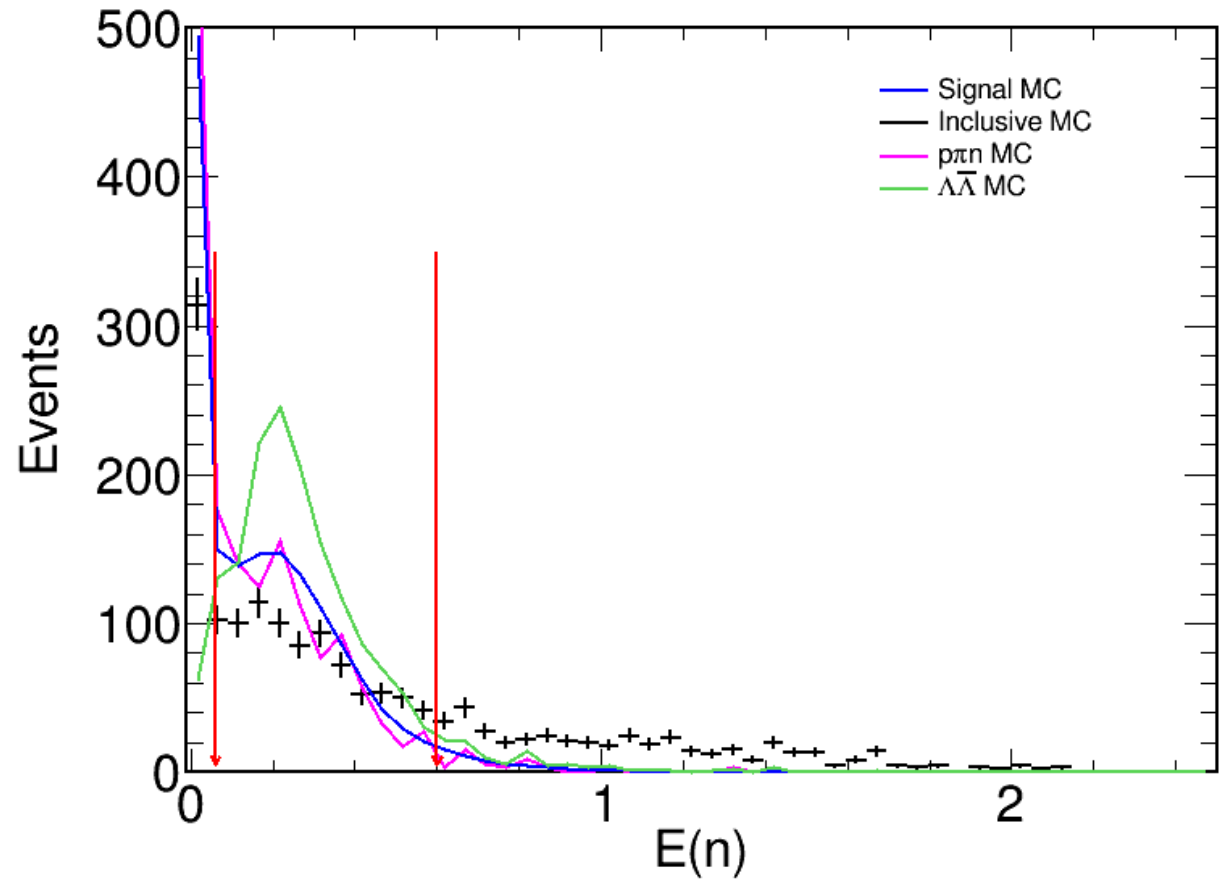
Cut:  $\text{chisq} (1c) < 10$

$0.06 < E(n) < 0.6 \text{ GeV}$

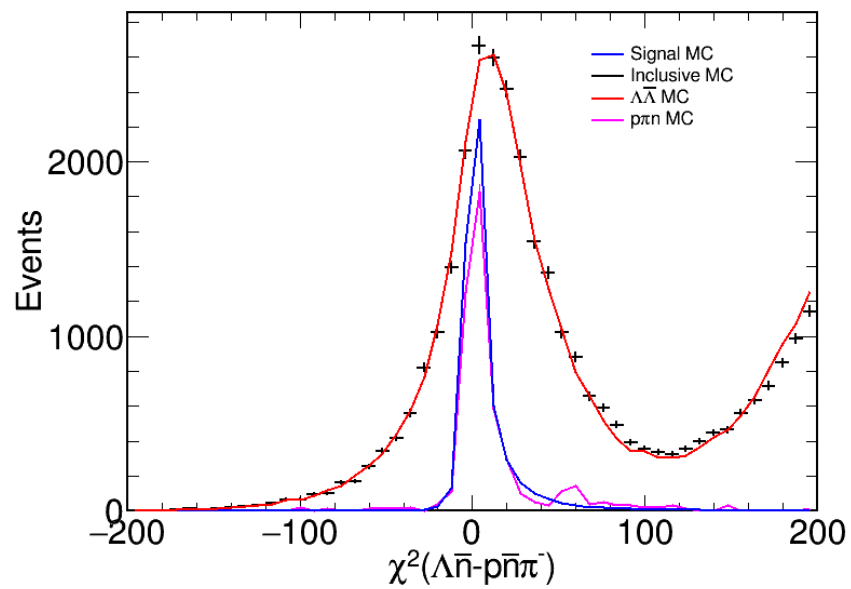
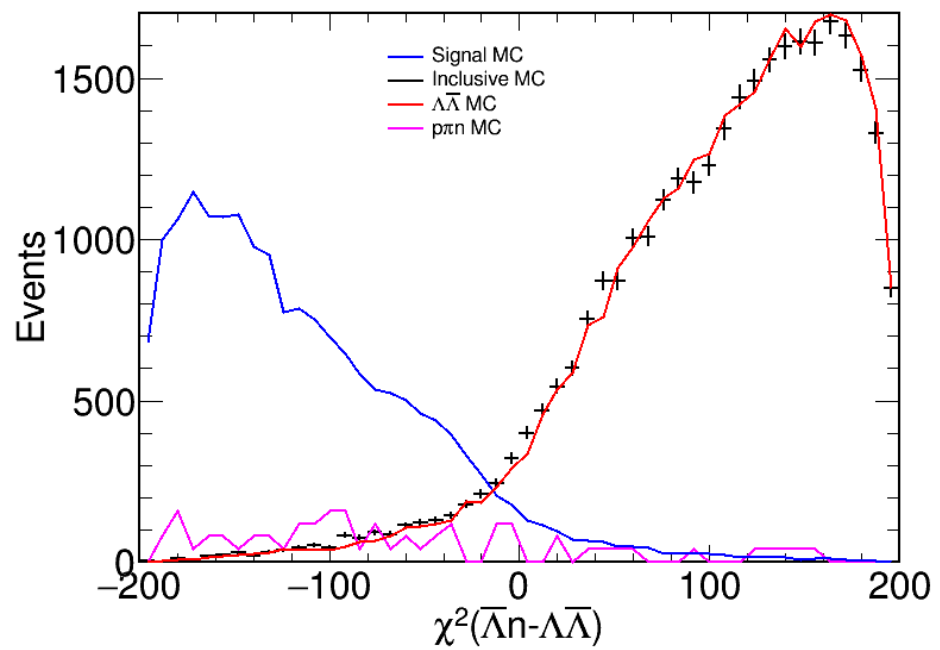
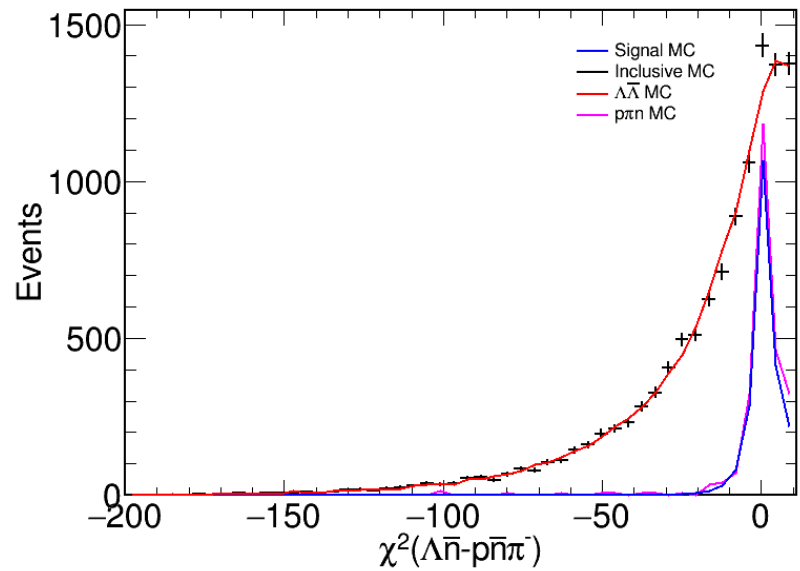
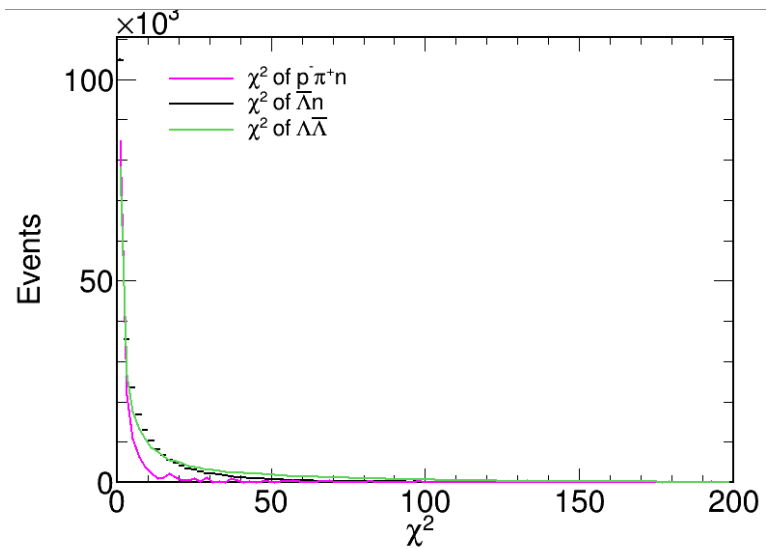
Decay Length  $> 1 \text{ cm}$

$M(\Lambda) : (1.11, 1.122)$

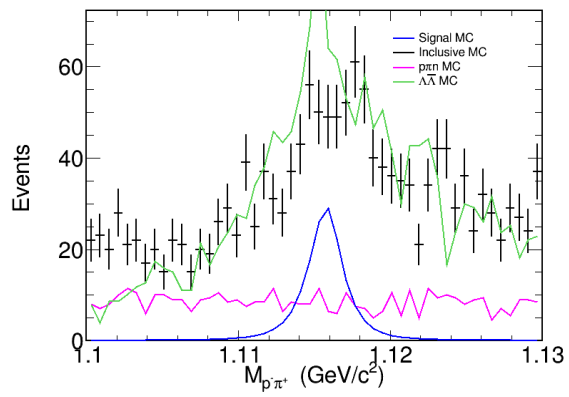




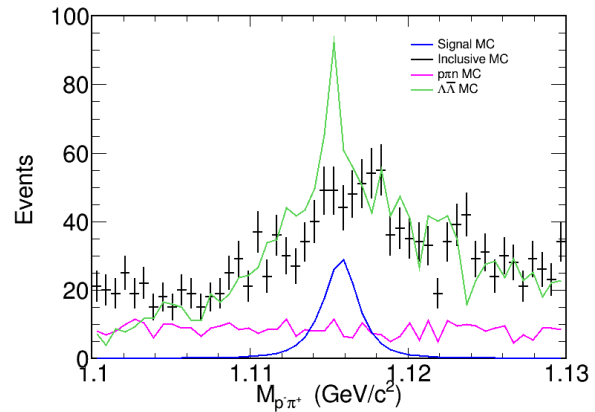
Deposit energy of EMC



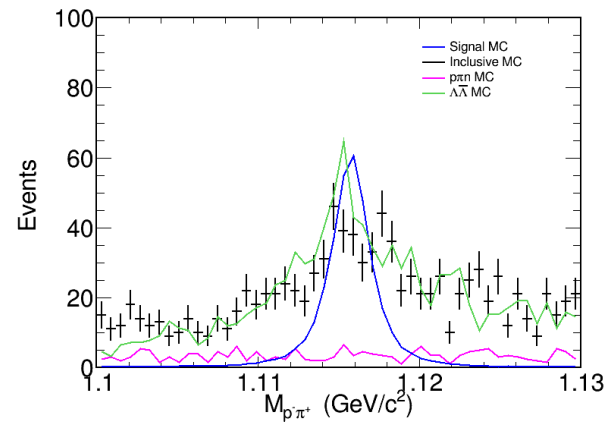




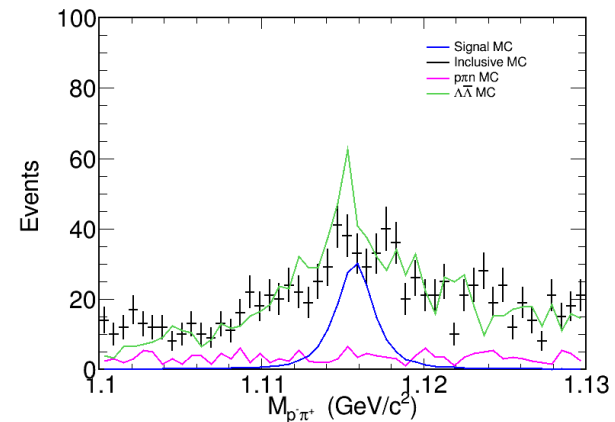
No cut



Cut  $\chi^2(\Lambda\bar{n}) < \chi^2(\Lambda\bar{l})$



$\chi^2(\Lambda\bar{n}) < \chi^2(\rho\pi\pi)$



Cut  $\chi^2(\Lambda\bar{n}) < \chi^2(\Lambda\bar{l})$   
 $\chi^2(\Lambda\bar{n}) < \chi^2(\rho\pi\pi)$

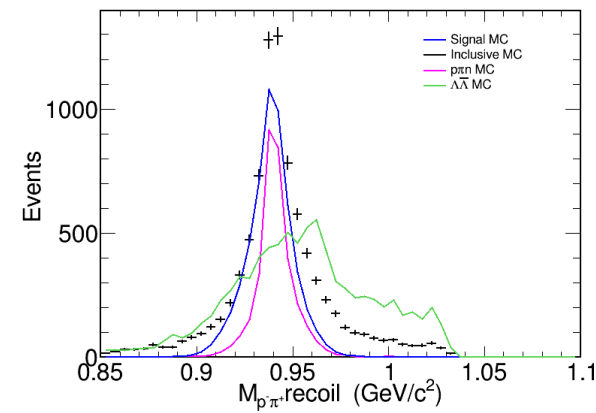
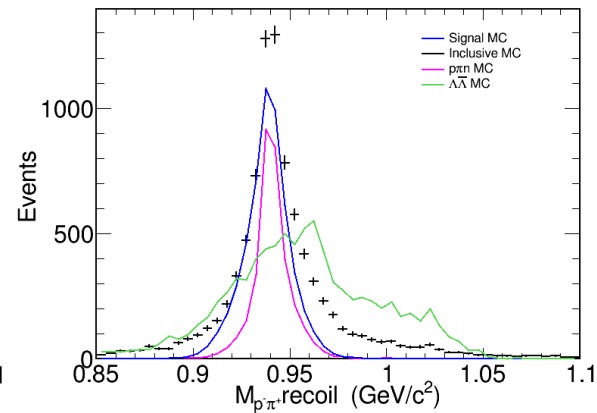
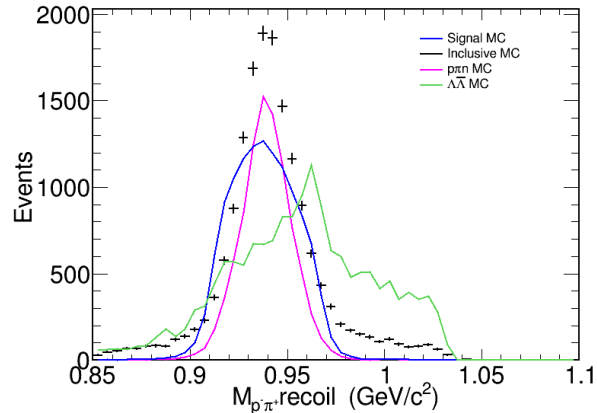
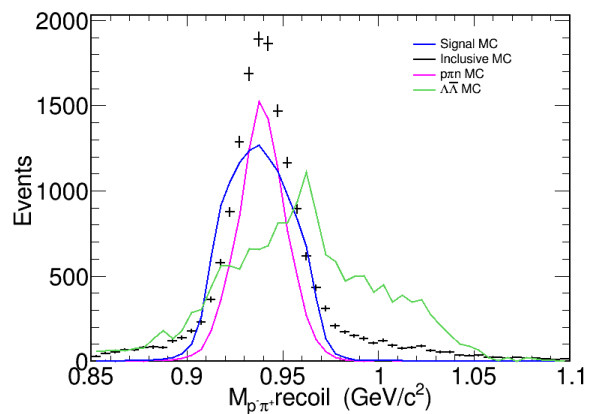
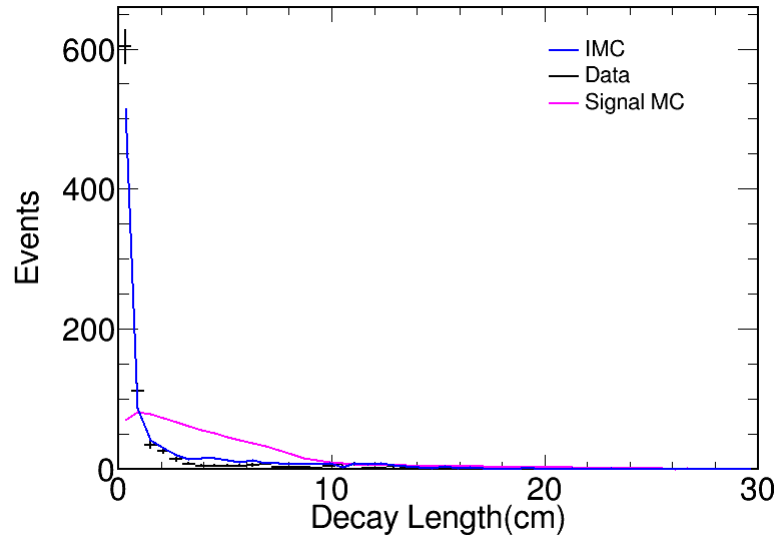
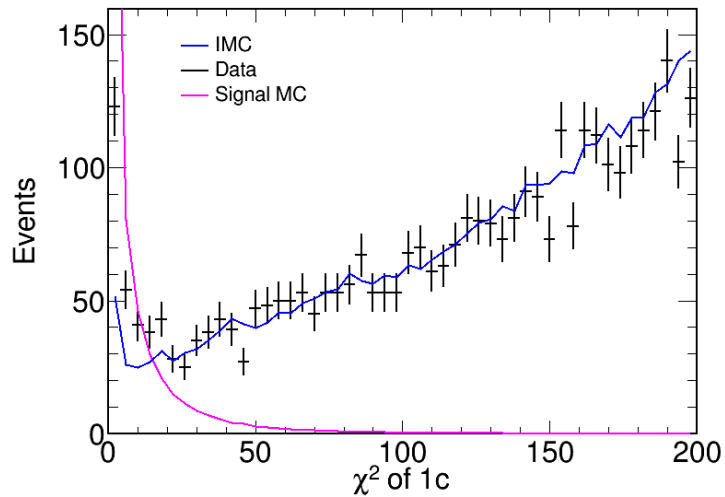
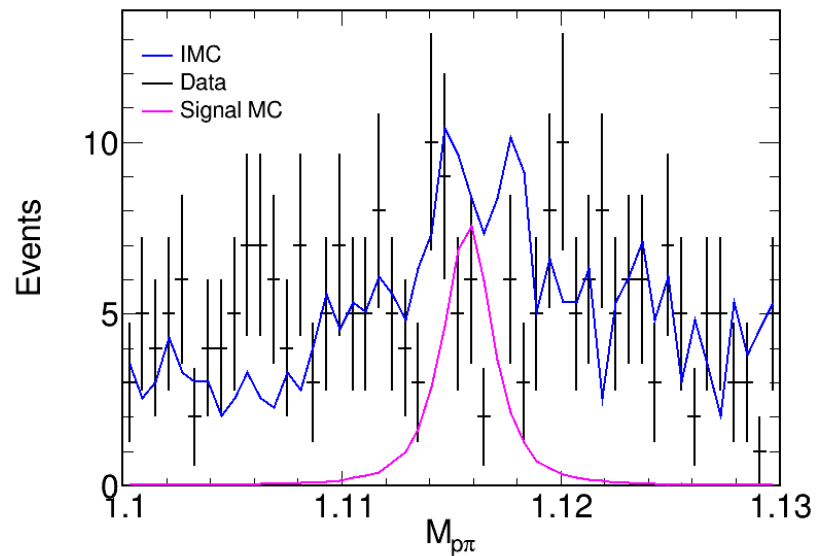
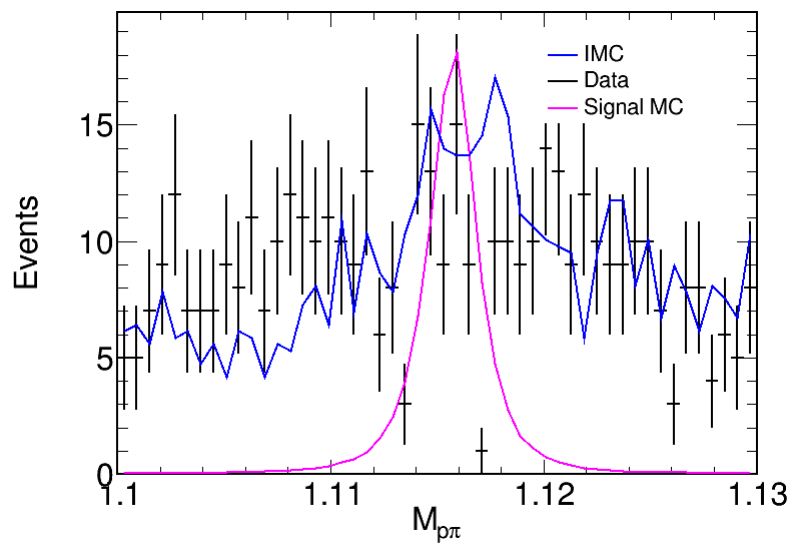


Table 1: Decay trees and their respective final states.

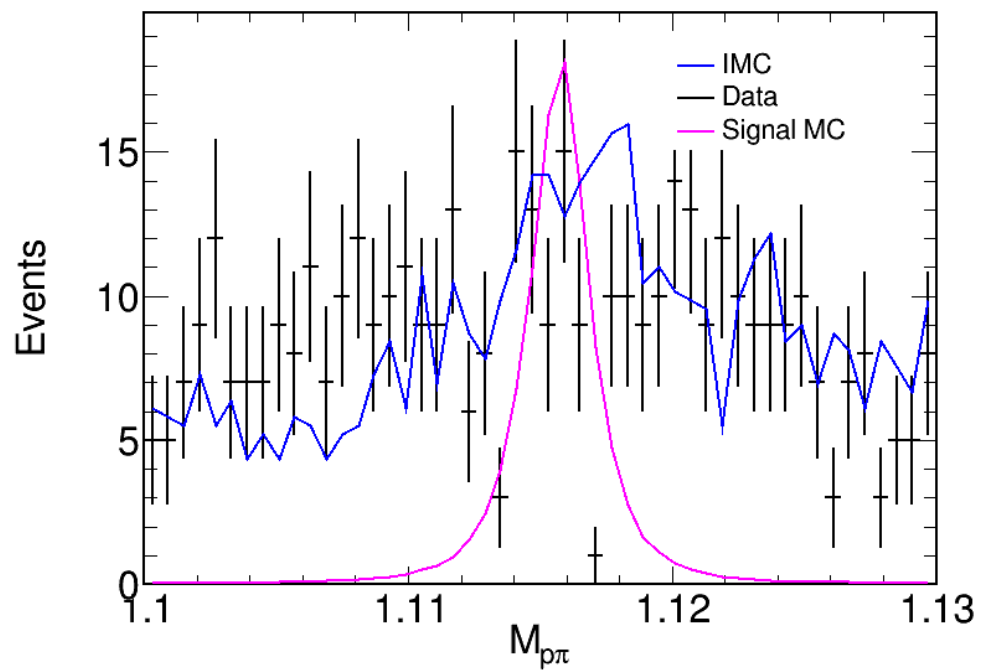
rowNo	decay tree	decay final state	iDcyTr	nEtr	nCEtr
1	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^0 n, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^0 \pi^+ n \bar{p}$	1	196	196
2	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^0 \bar{n}$	$\pi^0 \pi^- \bar{n} p$	0	103	299
3	$J/\psi \rightarrow \Lambda \bar{\Lambda}, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^+ \pi^- p \bar{p}$	3	87	386
4	$J/\psi \rightarrow \pi^+ n \bar{p}$	$\pi^+ n \bar{p}$	6	47	433
5	$J/\psi \rightarrow \pi^- \bar{n} p$	$\pi^- \bar{n} p$	7	13	446
6	$J/\psi \rightarrow \Sigma^0 \bar{\Sigma}^0, \Sigma^0 \rightarrow \Lambda \gamma, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \Lambda \rightarrow \pi^0 n, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^0 \pi^+ n \bar{p} \gamma \gamma$	10	8	454
7	$J/\psi \rightarrow \pi^0 \pi^+ \pi^+ \pi^- \pi^-$	$\pi^0 \pi^+ \pi^+ \pi^- \pi^-$	22	5	459
8	$J/\psi \rightarrow \pi^0 \pi^- K_S^0 K^+, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^0 \pi^+ \pi^- \pi^- K^+$	23	5	464
9	$J/\psi \rightarrow K_L^0 \pi^+ \pi^- K_S^0, K_S^0 \rightarrow \pi^+ \pi^-$	$K_L^0 \pi^+ \pi^+ \pi^- \pi^-$	17	3	467
10	$J/\psi \rightarrow \pi^+ \pi^- \omega, \omega \rightarrow \pi^0 \pi^+ \pi^-$	$\pi^0 \pi^+ \pi^+ \pi^- \pi^-$	26	3	470
11	$J/\psi \rightarrow \pi^- \bar{K}^* K^{*+}, \bar{K}^* \rightarrow \pi^+ K^-, K^{*+} \rightarrow \pi^0 K^+$	$\pi^0 \pi^+ \pi^- K^+ K^-$	14	2	472
12	$J/\psi \rightarrow \pi^+ \pi^- p \bar{p}$	$\pi^+ \pi^- p \bar{p}$	15	2	474
13	$J/\psi \rightarrow \pi^+ K_S^0 K^-, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^+ \pi^+ \pi^- K^-$	8	2	476
14	$J/\psi \rightarrow \pi^0 \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^-$	$\pi^0 \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^-$	9	2	478
15	$J/\psi \rightarrow \pi^+ K^* K^-, K^* \rightarrow \pi^- K^+$	$\pi^+ \pi^- K^+ K^-$	2	2	480
16	$J/\psi \rightarrow \pi^0 \pi^+ \pi^- K^+ K^-$	$\pi^0 \pi^+ \pi^- K^+ K^-$	13	2	482
17	$J/\psi \rightarrow \pi^- \bar{K}^* K^+, \bar{K}^* \rightarrow \pi^0 \bar{K}^0, \bar{K}^0 \rightarrow K_S^0, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^0 \pi^+ \pi^- \pi^- K^+$	31	2	484
18	$J/\psi \rightarrow \pi^0 \pi^0 \pi^+ \pi^+ \pi^- \pi^-$	$\pi^0 \pi^0 \pi^+ \pi^+ \pi^- \pi^-$	40	2	486
19	$J/\psi \rightarrow \Sigma^0 \bar{\Sigma}^0, \Sigma^0 \rightarrow \Lambda \gamma, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \Lambda \rightarrow \pi^- p, \bar{\Lambda} \rightarrow \pi^+ \bar{p}$	$\pi^+ \pi^- p \bar{p} \gamma \gamma$	54	2	488
20	$J/\psi \rightarrow \pi^- K_S^0 K^+, K_S^0 \rightarrow \pi^+ \pi^-$	$\pi^+ \pi^- \pi^- K^+$	59	2	490



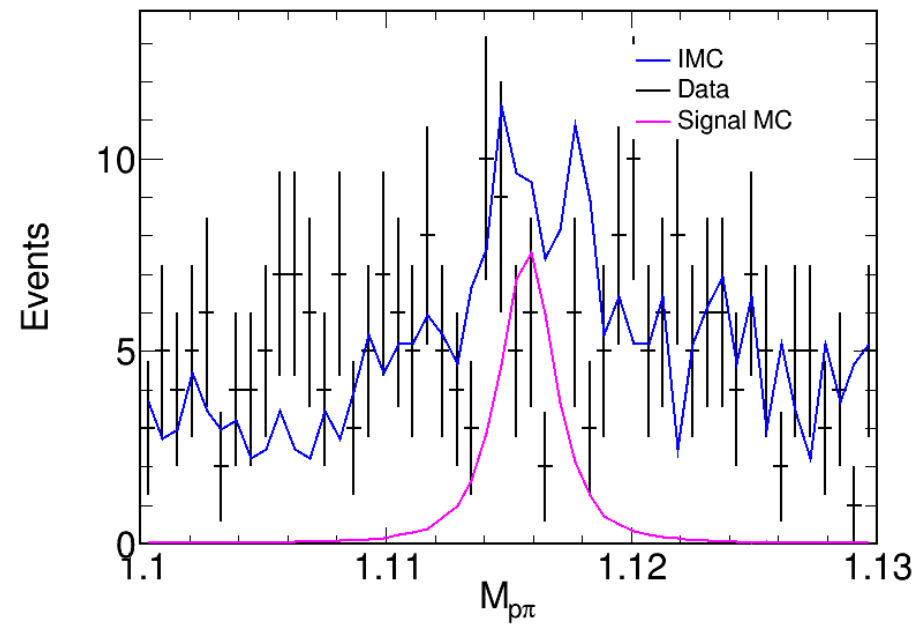
Cut:  $\text{chisq}(1c) < 10$   
 $0.06 < E(n) < 0.6 \text{ GeV}$   
 Decay Length  $> 1 \text{ cm}$   
 $M(\Lambda) : (1.11, 1.122)$



Cut  $\chi^2(\Lambda \bar{n}) < \chi^2(\Lambda \bar{1})$   
 $\chi^2(\Lambda \bar{n}) < \chi^2(\rho \pi n)$



$$\chi^2(\Lambda\bar{n}) < \chi^2(\Lambda\bar{1})$$



$$\chi^2(\Lambda\bar{n}) < \chi^2(\rho\pi n)$$