

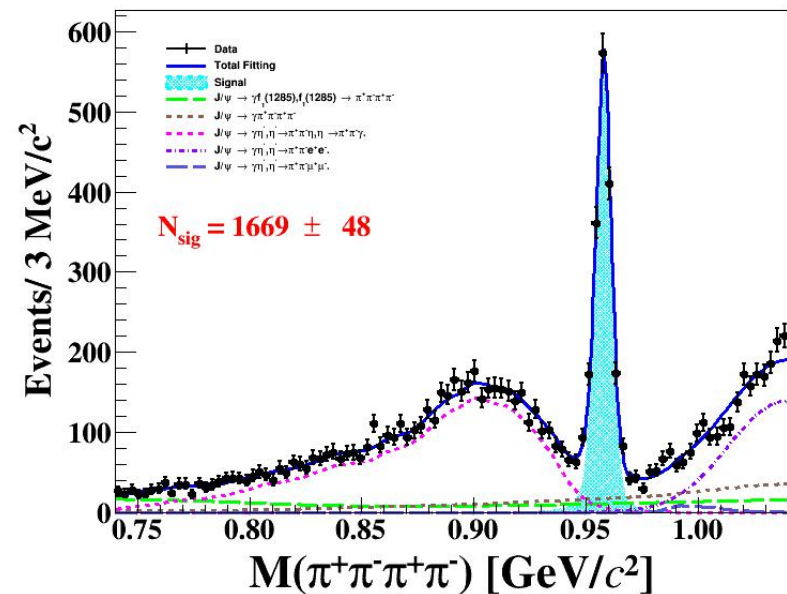
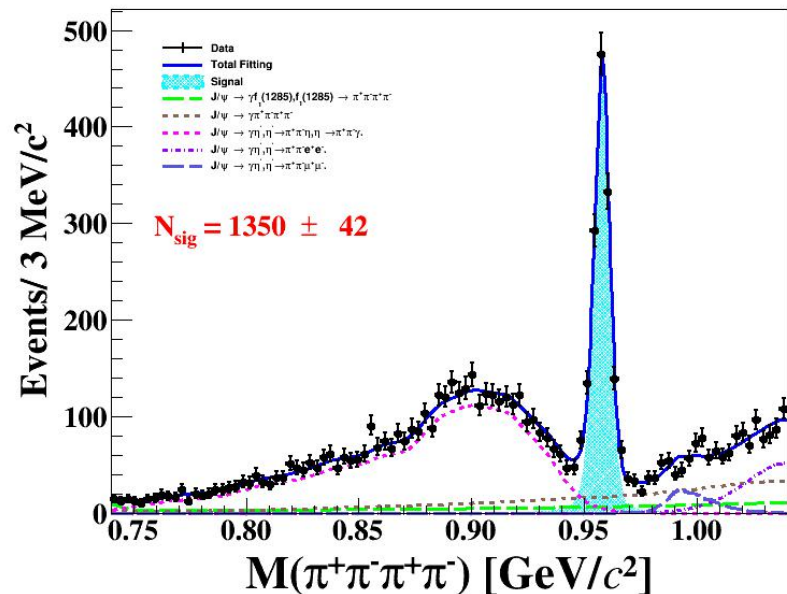
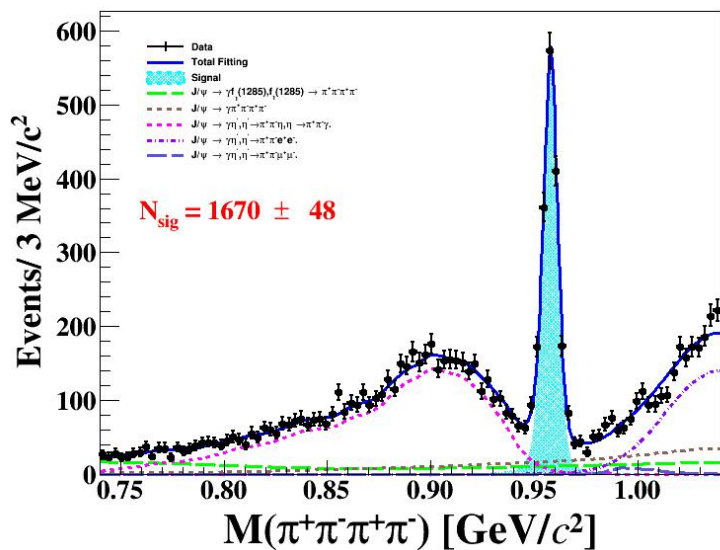
$$\varepsilon_{\pi}^{data} = 99\%$$

$$\varepsilon_{\pi}^{MC} = 100\%$$

- 2个 π 都鉴别
 - Data的鉴别效率为: $99\%^2$
 - MC的鉴别效率为: $100\%^2$
 - 差别为: $\sigma_{\pi} = \left(1 - \frac{\varepsilon^{data}}{\varepsilon^{MC}}\right) \times 100\% = 1.9\%$

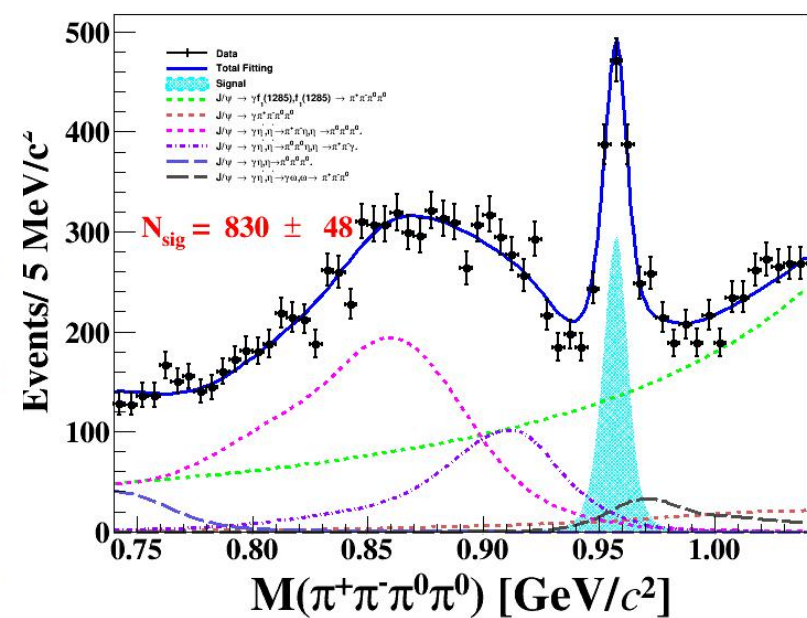
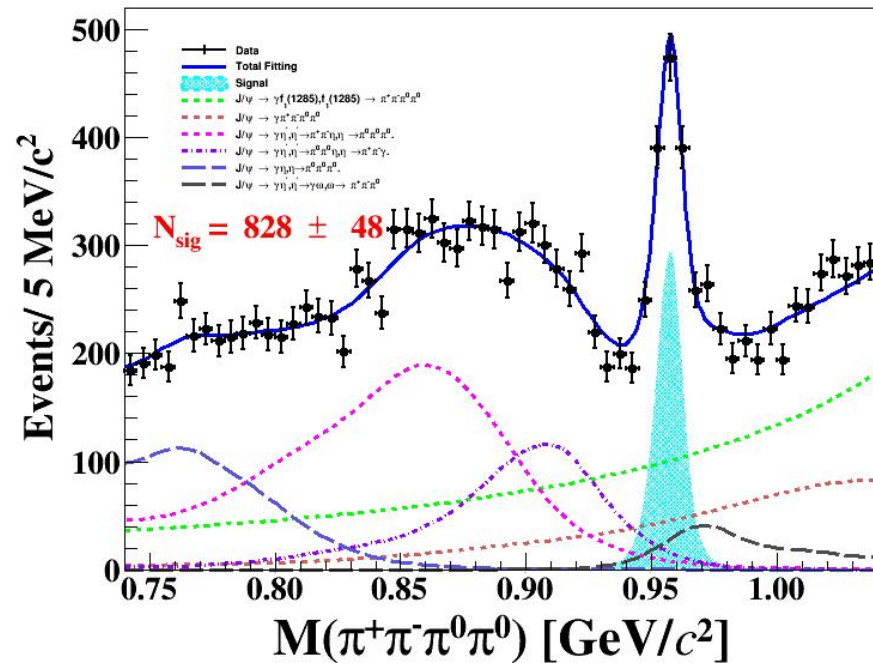
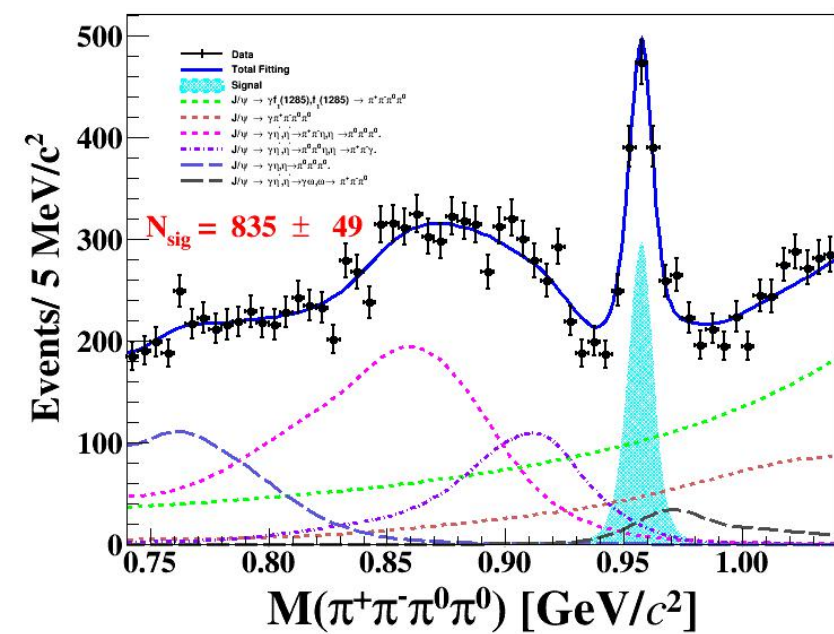
- 至少1个 π 被鉴别
 - Data的鉴别效率为: 99%
 - MC的鉴别效率为: 100%
 - 差别为: $\sigma_{\pi} = \left(1 - \frac{\varepsilon^{data}}{\varepsilon^{MC}}\right) \times 100\% = 1\%$

Fit ($\eta' \rightarrow \pi^+ \pi^- \pi^+ \pi^-$)



	N_{sig}	$\varepsilon(\%)$	$B(\times 10^{-5})$	N_{bkg1}	N_{bkg2}	N_{bkg3}	N_{bkg4}	N_{bkg5}
NO PID	1670±48	36.2	8.71±0.25(stat)	1129±183	1230±261	4350±103	1507±82	78±48
$N(\pi^+) = 2$ $N(\pi^-) = 2$	1350±42	32.4	7.86±0.24(stat)	536±329	1200±307	3489±103	418±50	193±40
$N(\pi) \geq 1$	1669±48	36.2	8.70±0.25(stat)	1129±786	1232±740	4350±96	1501±77	79±68

Fit ($\eta' \rightarrow \pi^+ \pi^- \pi^0 \pi^0$)



	N_{sig}	$\epsilon(\%)$	$B(\times 10^{-5})$	N_{bkg1}	N_{bkg2}	N_{bkg3}	N_{bkg4}	N_{bkg5}	N_{bkg6}
NO PID	835 ± 45	7.79	$2.11 \pm 0.12(stat)$	4901 ± 322	1906 ± 200	4289 ± 143	1679 ± 117	1446 ± 74	396 ± 129
NO PID	828 ± 48	7.79	$2.09 \pm 0.12(stat)$	4862 ± 306	1843 ± 202	4177 ± 146	1781 ± 120	1466 ± 74	477 ± 128
PID	830 ± 48	7.76	$2.10 \pm 0.12(stat)$	6517 ± 498	467 ± 320	4270 ± 149	1568 ± 111	264 ± 44	392 ± 121