

Weekly work report

PWA of $e^+e^- \rightarrow K^+K^-\pi^0\pi^0$

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Data sample

➤ **Boss version 6.6.5 p01**

➤ **Date sets**

15 Rscan data

➤ **Exclusive MC (ConExc)**

$$e^+ e^- \rightarrow K^{*-} K^+ \pi^0$$

$$e^+ e^- \rightarrow K^{*-} K^{*+}$$

$$e^+ e^- \rightarrow K^+ K^- \pi^0 \pi^0$$

$$e^- e^+ \rightarrow \phi \pi^0 \pi^0$$

$$e^+ e^- \rightarrow K_S K^\pm \pi^\mp$$

$$e^+ e^- \rightarrow K^\pm K^\mp \pi^0 / \eta$$

Event selection criteria(I)

➤ Charged Tracks:

$|V_r| < 1.0 \ \&\& \ |V_z| < 10.0 \ \&\& \ |\cos\theta| < 0.93;$

$N_{\text{good}} == 2 ;$

➤ PID:

Kaon: $\text{prob_K} > \text{prob_P} \ \&\& \ \text{prob_K} > \text{prob_}\pi$;

$N_{\text{good}} == 2 : N(K+) = N(K-) = 1;$

➤ Good Photon:

$E_{\text{barrel}} > 25 \text{ MeV}; E_{\text{endcap}} > 50 \text{ MeV} ;$

$\theta_{\min(\gamma, \text{charge})} > 10^\circ ;$

$0 \leq TDC \leq 14 ; N\gamma \geq 4 ;$

Event selection criteria(II)

- 6C kinematic fit : ($4\gamma K^+K^-$)
constraint a pair π^0 mass

Amplitude

$K^+ K^- \pi^0 \pi^0$

$K^+ K^- f_0(980)$

$K^+ K^- \sigma$

$K^+ K^- f_0(1370)$

$\Phi \pi^0 \pi^0$

$\Phi \sigma$

$\Phi f_0(980)$

$\Phi f_2(1270)$

$\Phi f_0(1370)$

$K^{*+} K^{*-}$

$K^{*\pm} K^\mp \pi^0$

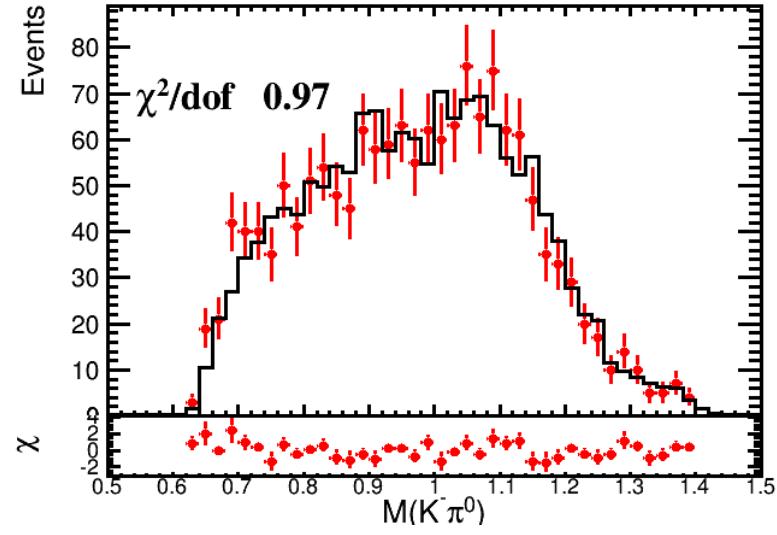
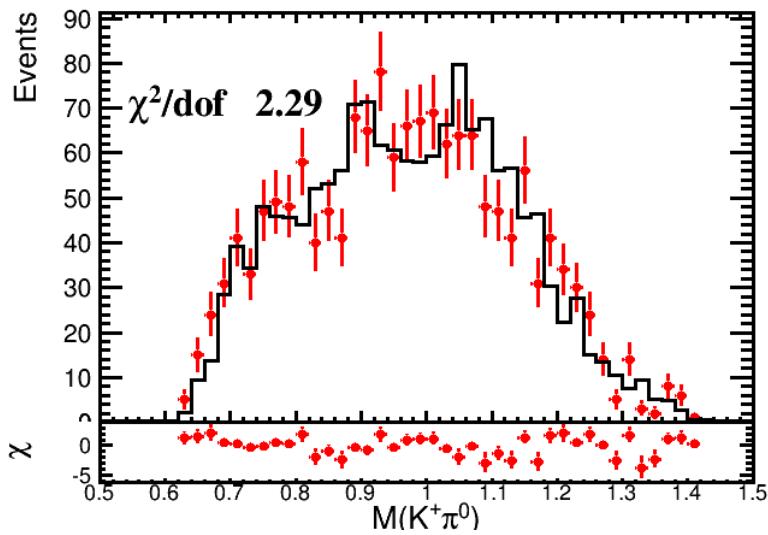
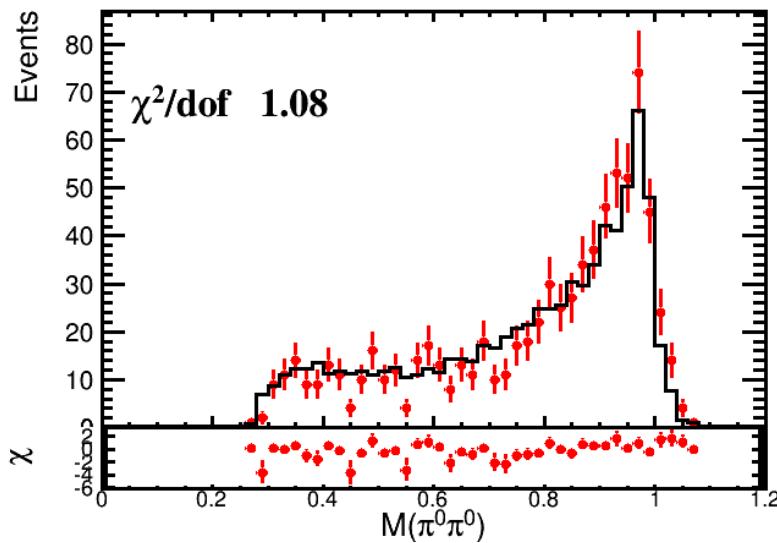
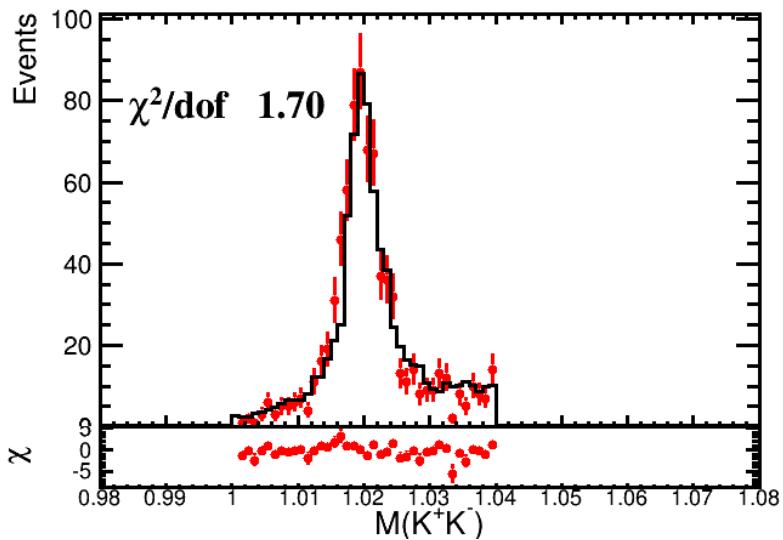
$K_1(1400)K$

$K_1(1270)K$

Phi mass window region:
 $|M(KpKm)-1.02| < 0.02 \text{ GeV}$

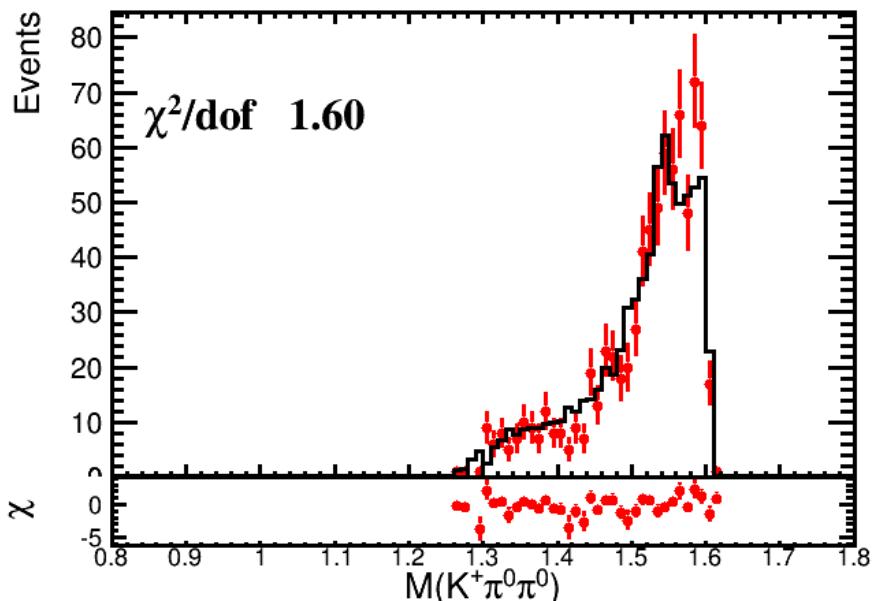
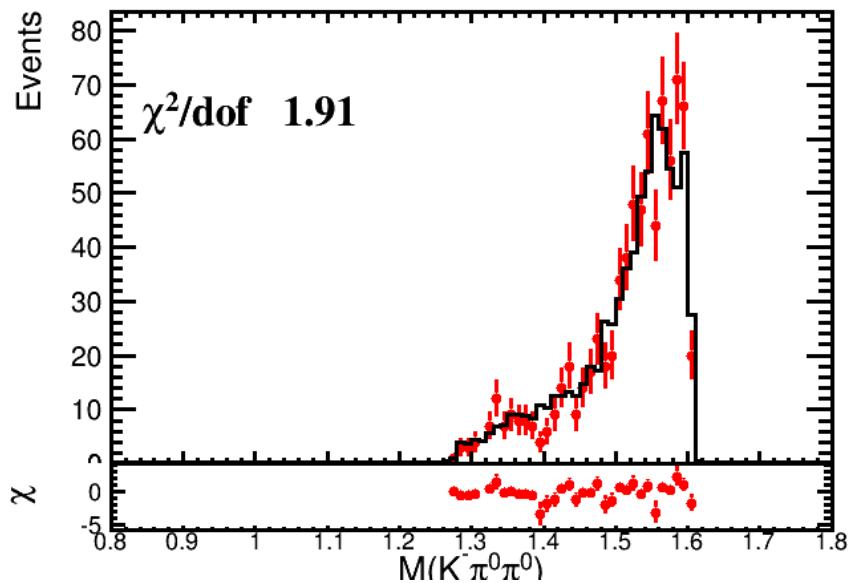
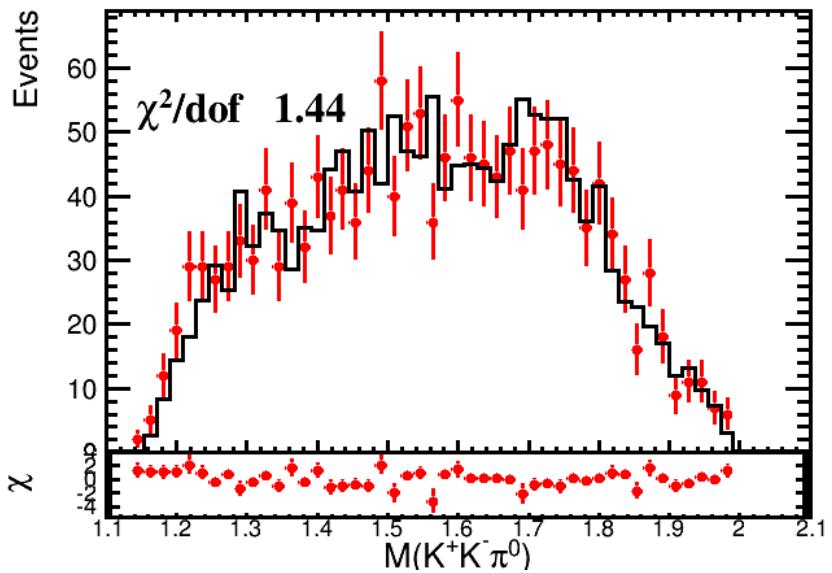
2.125

phi region



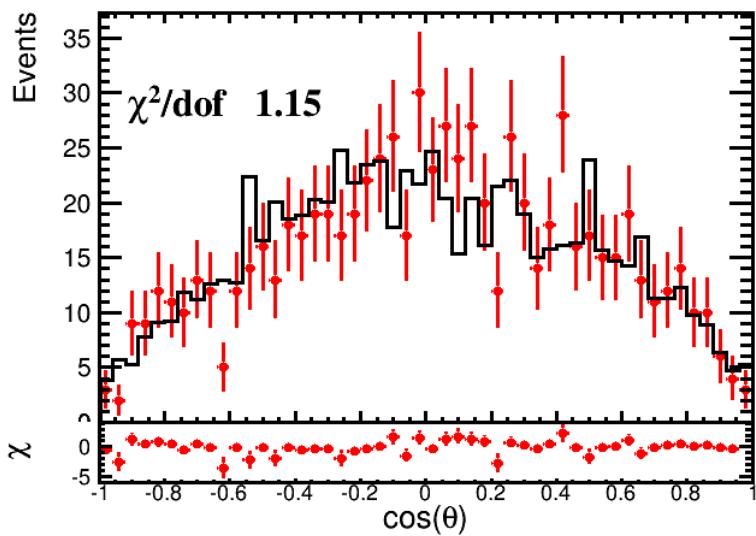
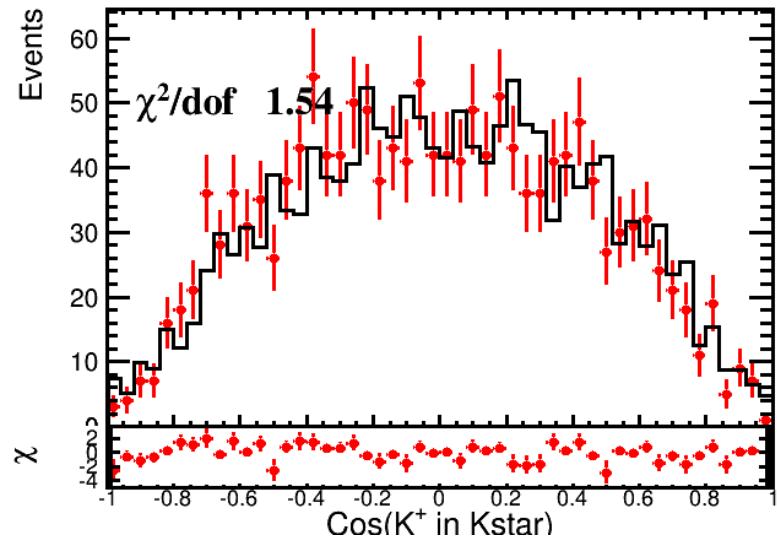
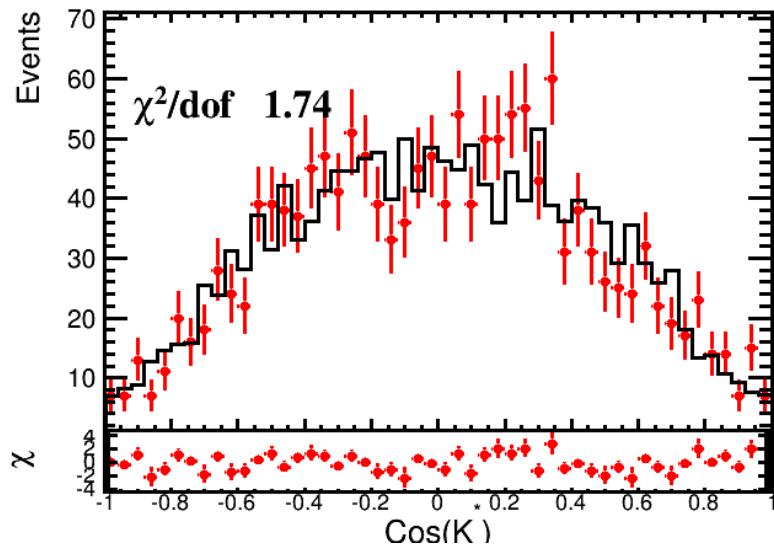
2.125

phi region



2.125

phi region



$\Phi\pi^0\pi^0$ cross section measurement calculation

$$(1 + \delta) = \frac{\sigma^{obs}}{\sigma^B} = \frac{BW(s(1 - x))F(x, s)dx}{BW(s)}$$

$$\sigma^B = \frac{N_{obs}}{\mathcal{L}_{int}(1 + \delta^r)(1 + \delta^v)\epsilon Br}$$

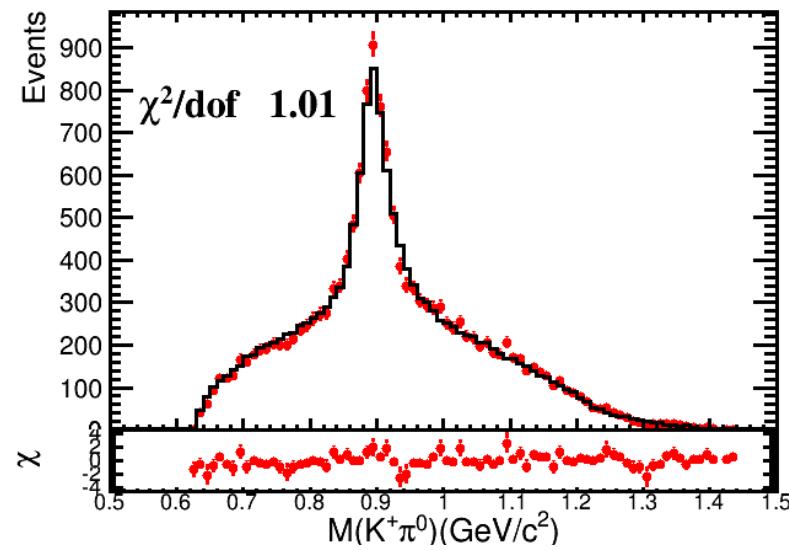
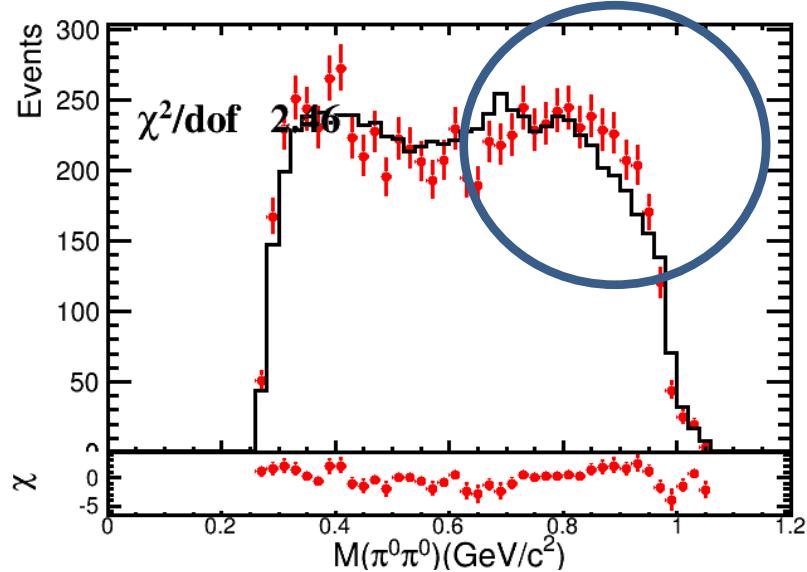
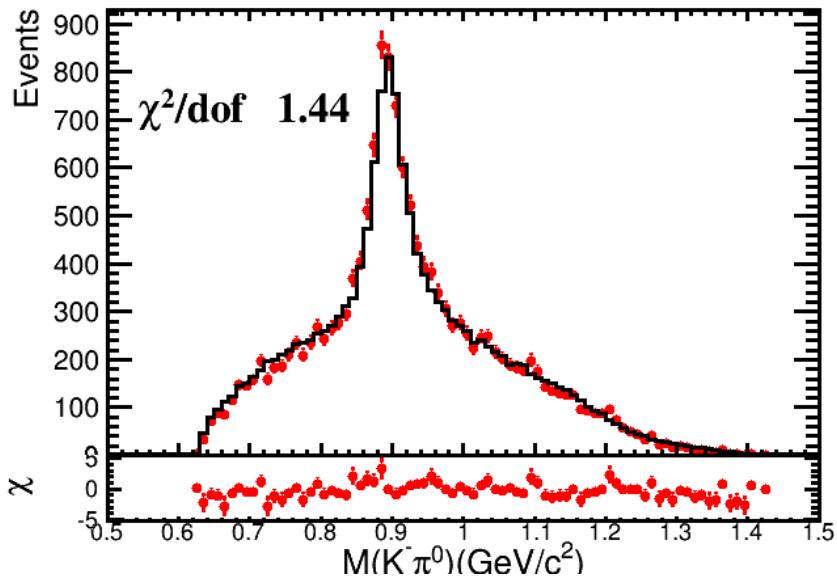
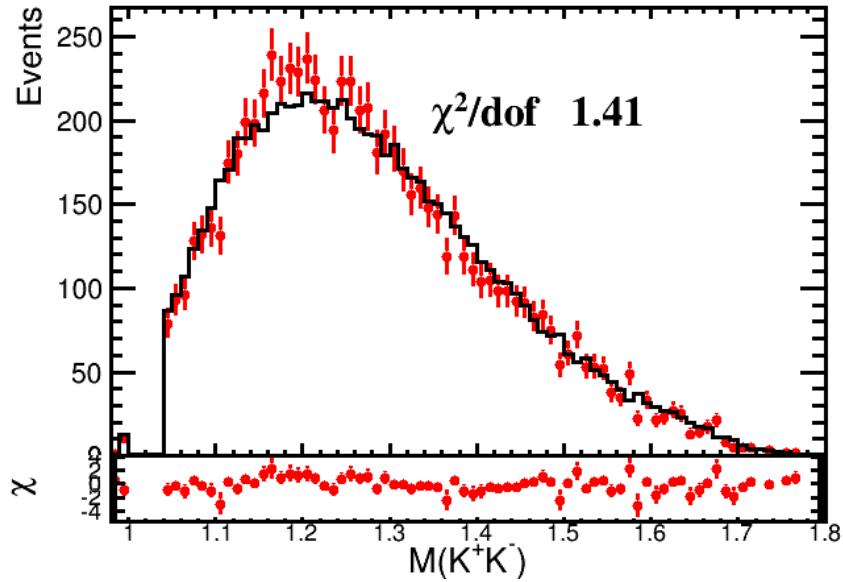
196.6 pb our result

198.9 ± 7.3 pb

BESIII(Xiaolin)

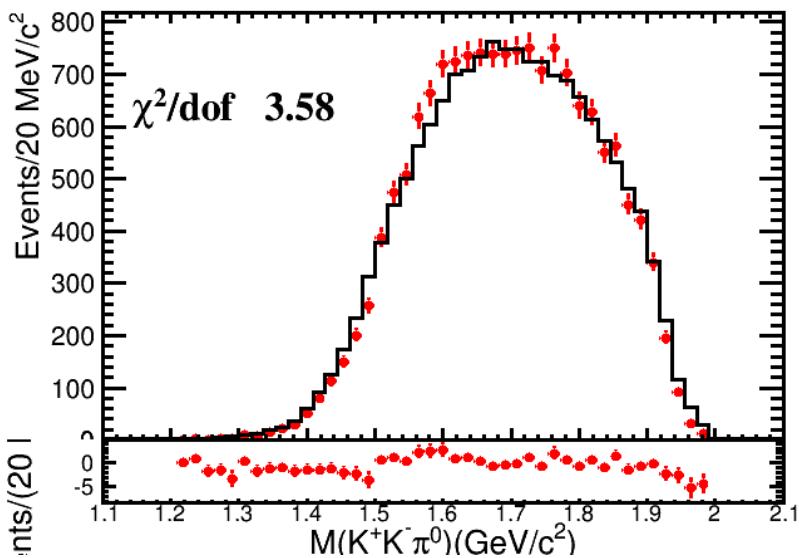
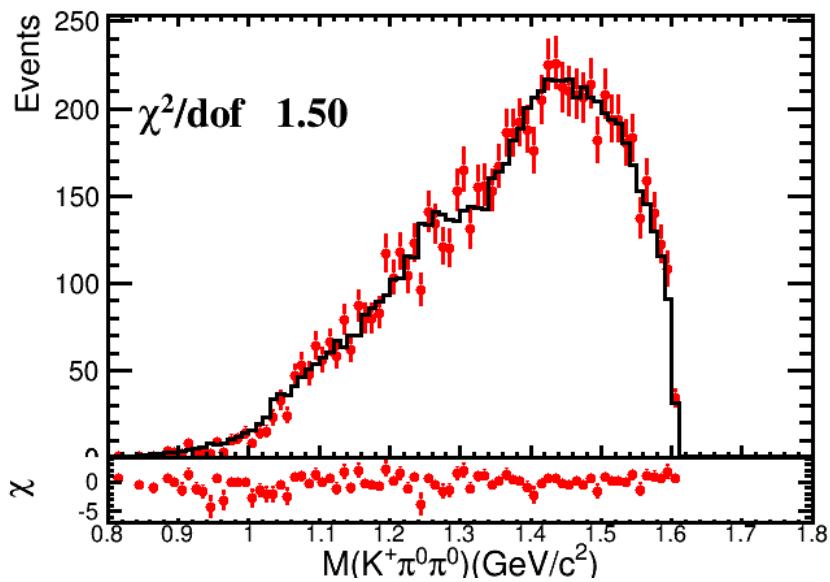
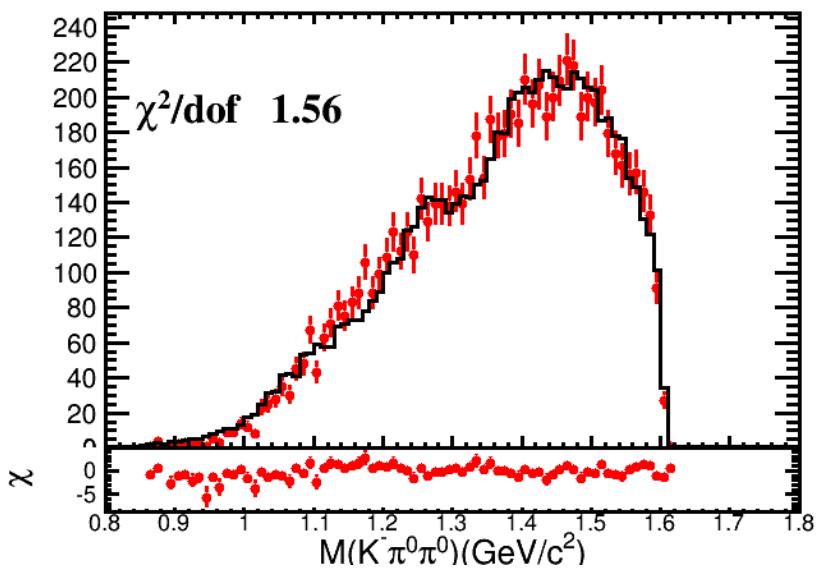
2.125

None phi region



2.125

None phi region



2.125

None phi region

