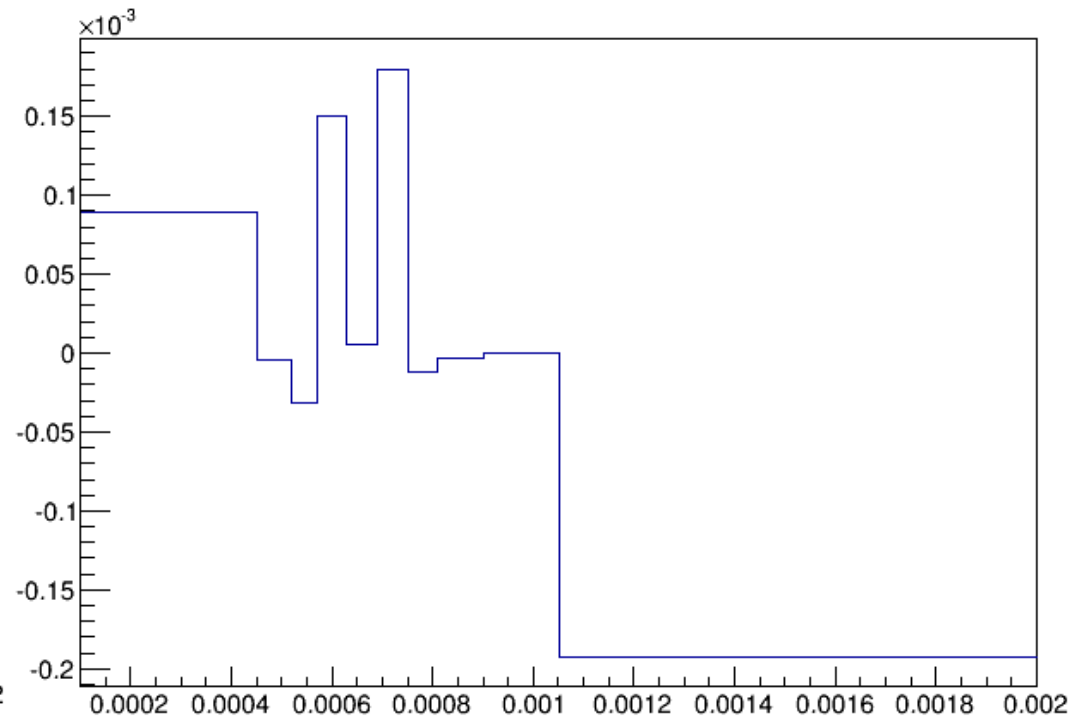
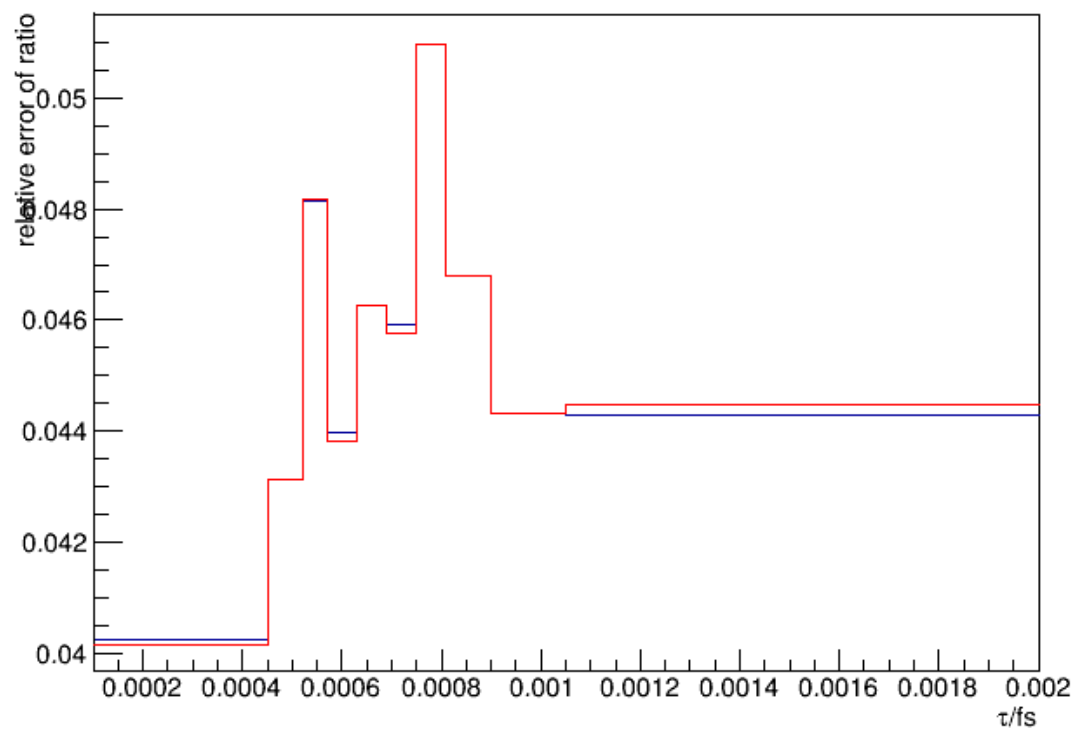


组会报告

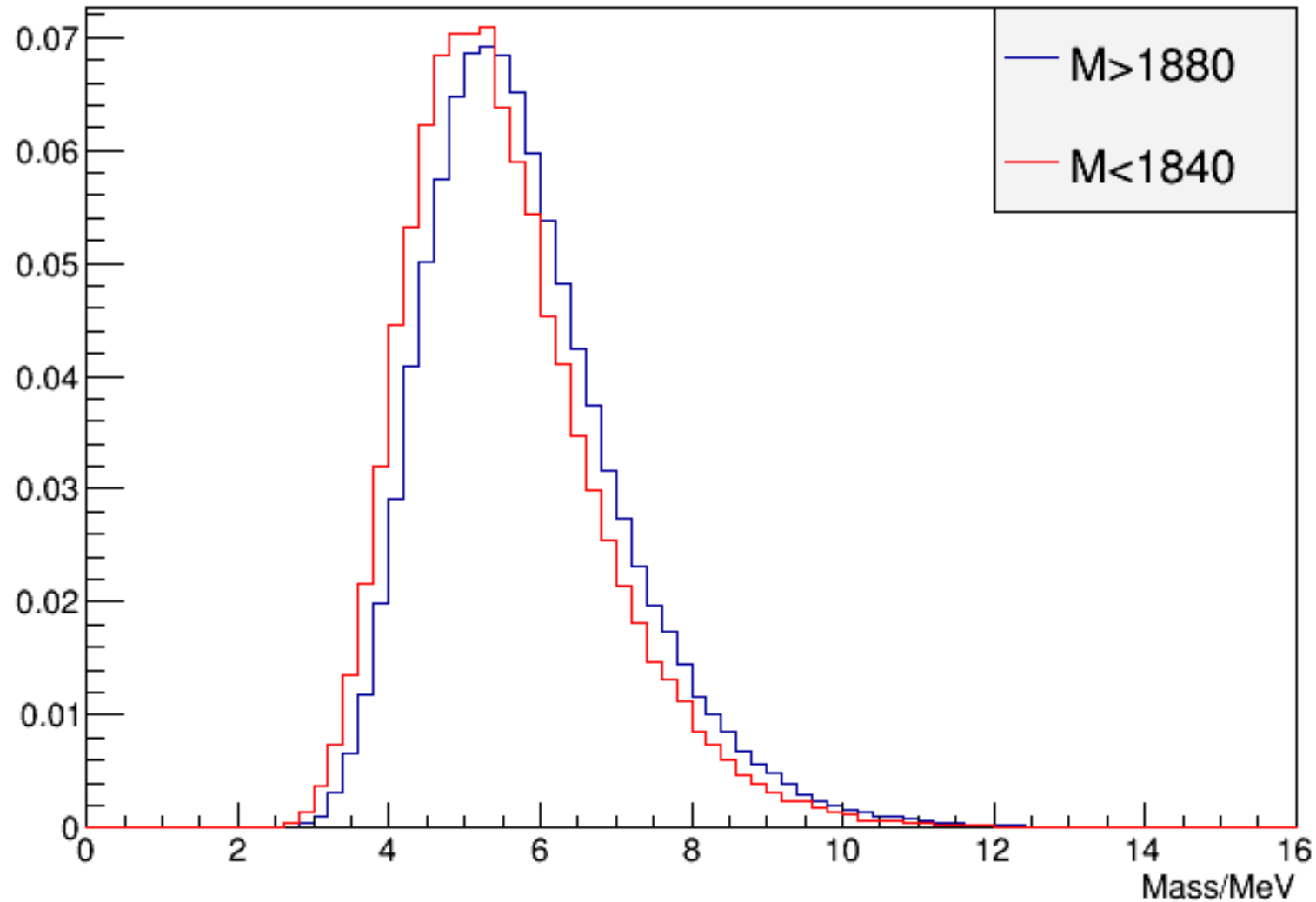
敖冬

Fit in bins with same $mean_E$

- $\Delta\text{Relative error} < 0.2e-3$

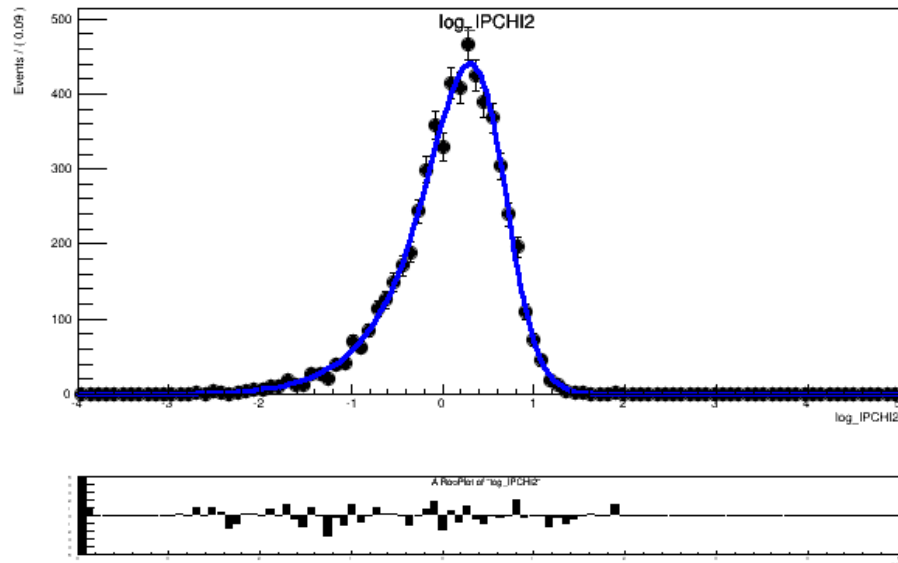


Merr of different mass (D0)

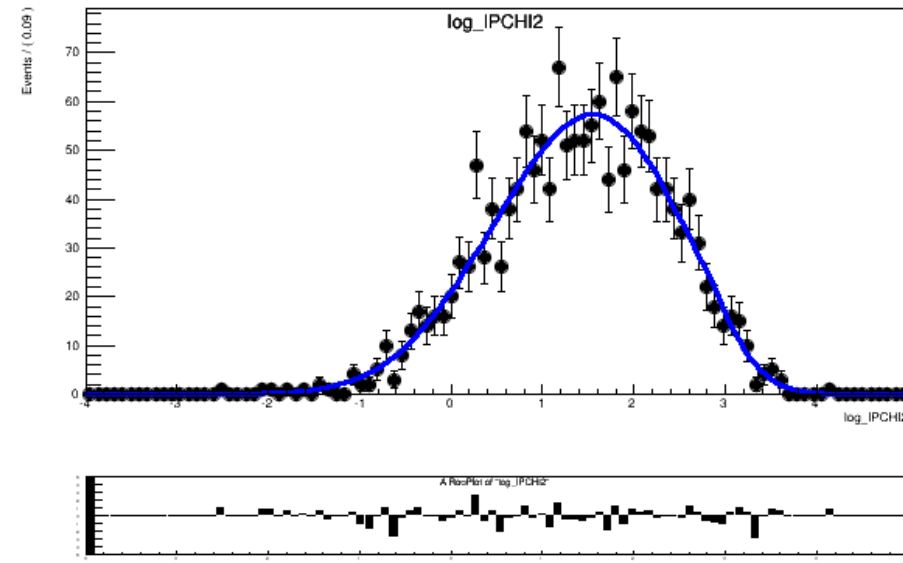


Combine IPCHI2 and mass model

- Fitting MC
- prompt

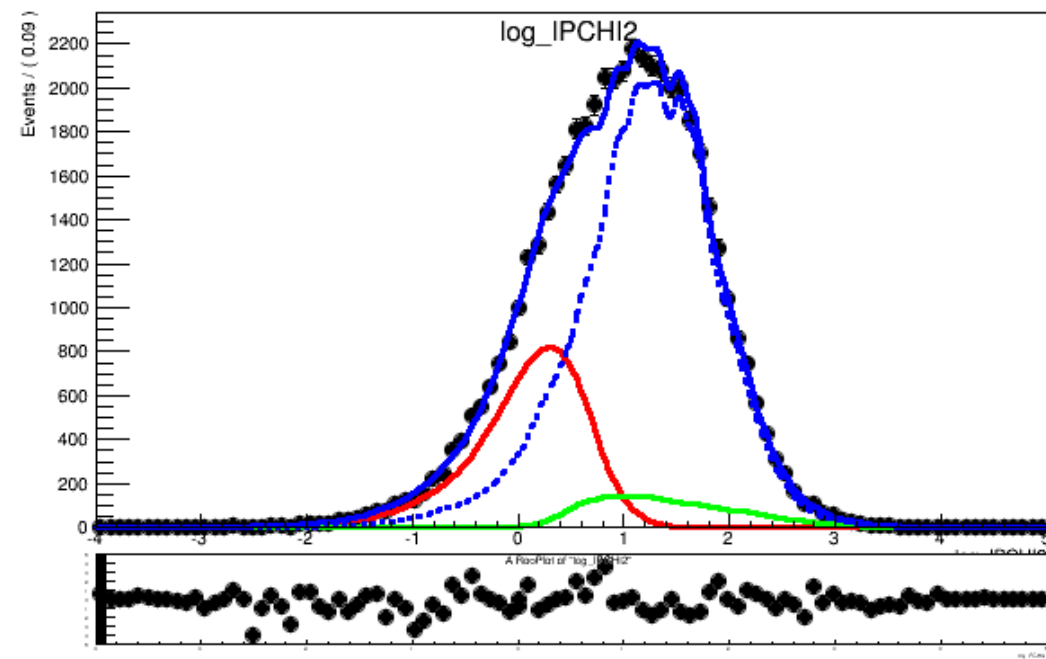
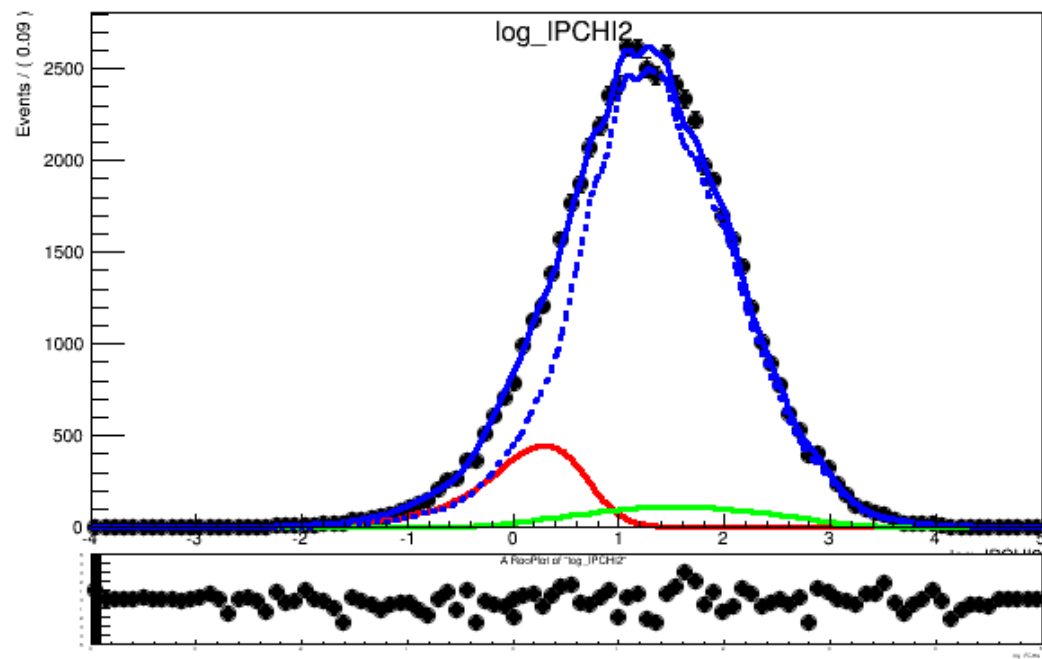


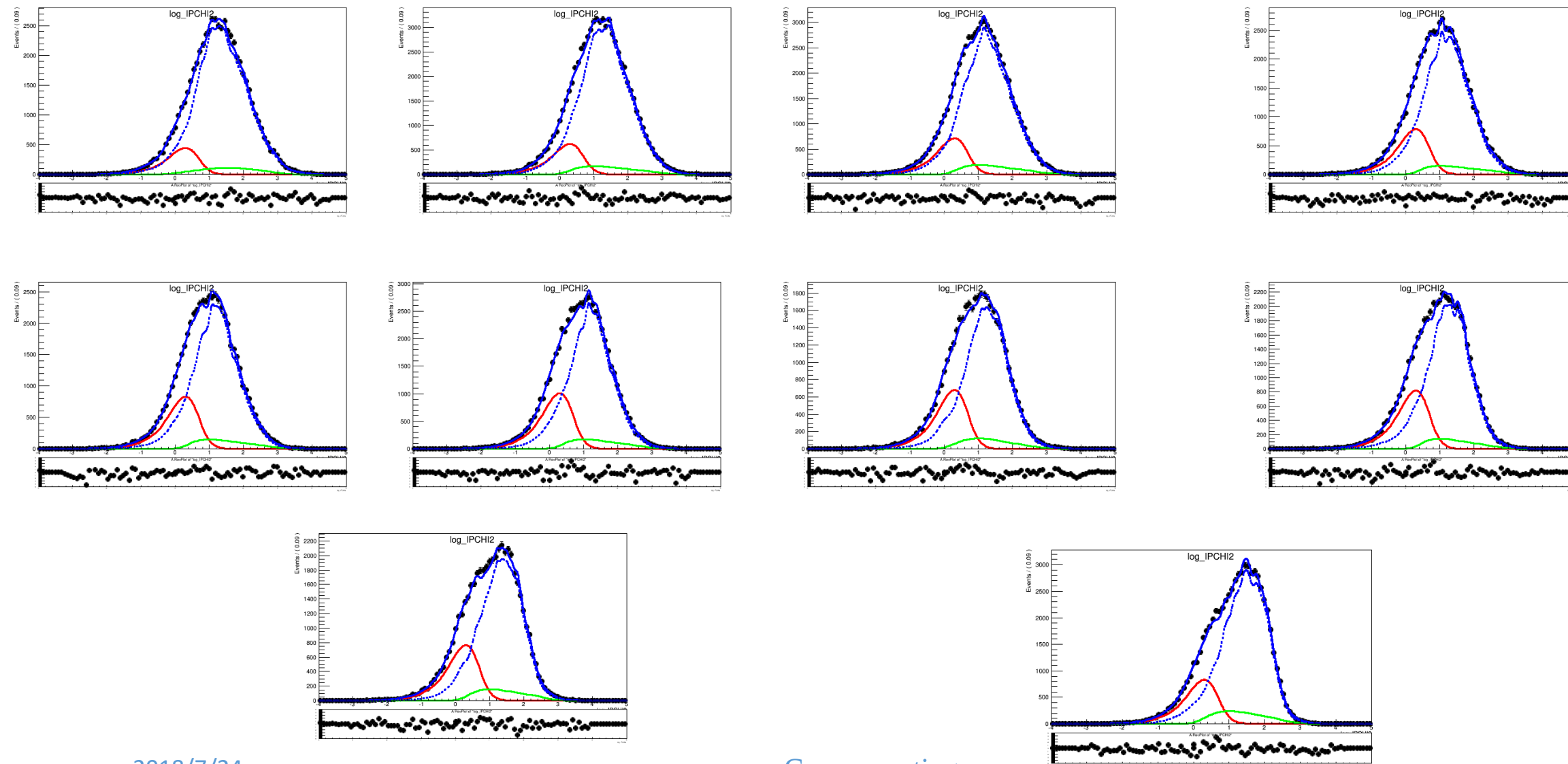
secondary



Combine IPCHI2 and mass model

- For D0 signal:
 - Prompt log(IPCHI2): all parameters fixed
 - Secondary log(IPCHI2): no parameters fixed
- For background:
 - Sideband : $M \in [1820, 1835] \cup [1895, 1910]$
 - Use RooKeysPdf get the shape
- Free parameters:
 - $n_{prompt}, n_{secondary}, mean_D$
 - Secondary log(IPCHI2): $\mu, \sigma, \rho_1, \rho_2, \xi$





Apply BDT (trained using Ξ) on D0 sample

- $p \quad K^- \quad K^- \quad \pi^+$

- $\pi^- \quad K^- \quad K^+ \quad \pi^+$

$\log(\chi_{IP}^2)$ modeling

- Bukin function, a modified Novosibirsk function with extended tail parameters

$$\mathcal{P}(x; \mu, \sigma, \xi, \rho_1, \rho_2) = \begin{cases} \exp \left\{ \frac{(x-x_1)\xi \sqrt{\xi^2+1} \sqrt{2 \ln 2}}{\sigma \left(\sqrt{\xi^2+1}-\xi \right)^2 \ln \left(\sqrt{\xi^2+1}+\xi \right)} + \rho_1 \left(\frac{x-x_1}{\mu-x_1} \right)^2 - \ln 2 \right\} & x \leq x_1, \\ \exp \left\{ - \left[\frac{\ln \left(1+2\xi \sqrt{\xi^2+1} \frac{x-\mu}{\sigma \sqrt{2 \ln 2}} \right)}{\ln \left(1+2\xi^2-2\xi \sqrt{\xi^2+1} \right)} \right]^2 \times \ln 2 \right\} & x_1 < x < x_2, \\ \exp \left\{ \frac{(x-x_2)\xi \sqrt{\xi^2+1} \sqrt{2 \ln 2}}{\sigma \left(\sqrt{\xi^2+1}-\xi \right)^2 \ln \left(\sqrt{\xi^2+1}+\xi \right)} + \rho_2 \left(\frac{x-x_2}{\mu-x_2} \right)^2 - \ln 2 \right\} & x \geq x_2. \end{cases}$$

where

$$x_1 = \mu + \sigma \sqrt{2 \ln 2} \left(\frac{\xi}{\sqrt{\xi^2+1}} - 1 \right)$$
$$x_2 = \mu + \sigma \sqrt{2 \ln 2} \left(\frac{\xi}{\sqrt{\xi^2+1}} + 1 \right)$$

Turbo selection for $\Omega_c^0 \rightarrow p K^- K^- \pi^+$

Items	Cuts
Daughter p	(TRCHI2DOF<3) (PT>500.) (P > 10000.) (PIDp > 10.0) & ((PIDp-PIDK) > 5.0) (MIPCHI2DV(PRIMARY) > 4.0)
Daughter K	(TRCHI2DOF<3) (PT>500.) (P>1000.) (PIDK>10.) (MIPCHI2DV(PRIMARY) > 4.0)
Daughter π	(TRCHI2DOF<3) (PT>500.) (P>1000.) (PIDK<0.) (MIPCHI2DV(PRIMARY) > 4.0)
MotherCut	(VFASPF(VCHI2PDOF) < 10.0) (BPVDIRA > cos(0.01)) (BPVLTIME() > 0.0001) (BPVVDCHI2 > 10.0)
CombinationCut	(in range(2386.0, AM, 2780.0)) ((APT1+APT2+APT3+APT4) > 3000.0) (AHASCHILD(PT > 1000.0)) (ANUM(PT > 500.0) >= 2) (AHASCHILD((MIPCHI2DV(PRIMARY)) > 8.0)) (ANUM(MIPCHI2DV(PRIMARY) > 6.0) >= 2)