

Analysis Meeting vol.32

2014.9.19

Mass Template Status

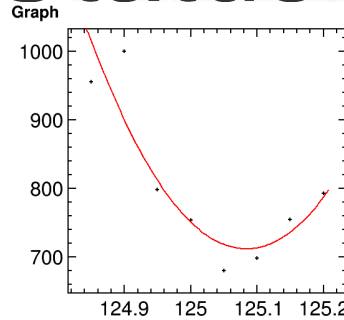
Some χ^2 points fluctuate

Problem of BG statistics?

Use smoothed BG line (pol3)

Fluctuation was banished

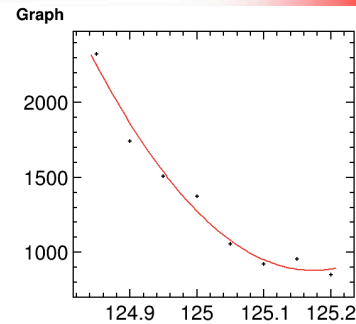
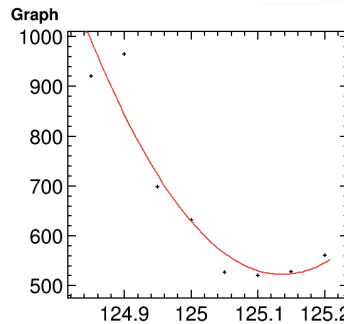
Bug was found



signal histogram
+ BG histogram

signal histogram
+ 3rd order polynomial

Fluctuation still exist (left)



Reference Data

Likelihood Training

Likelihood Training

Reference Data

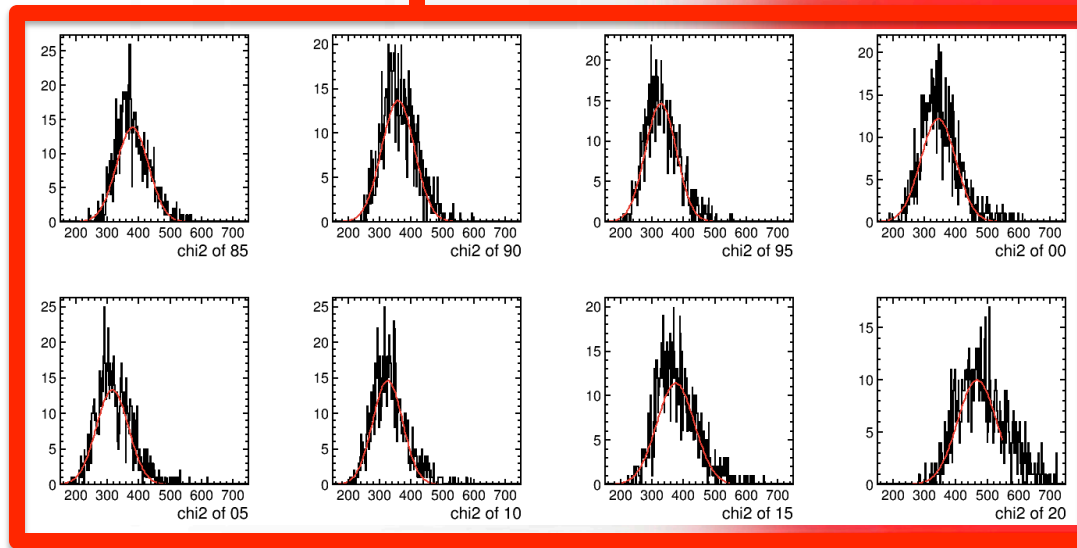
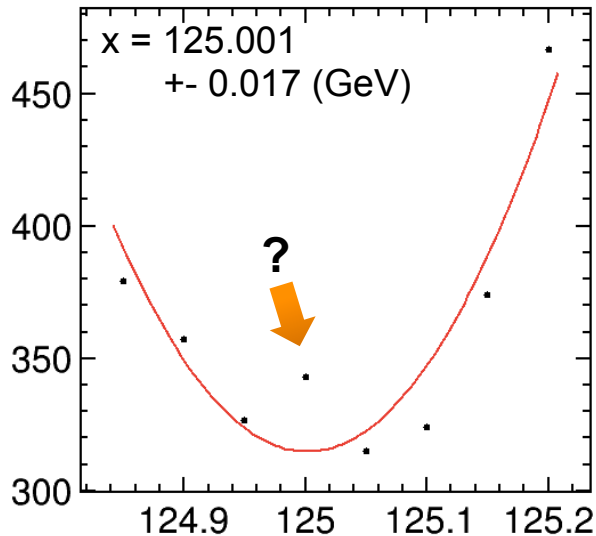
- Another half statistics are also tried (right fig.)
- Using another statistics, fluctuation is suppressed?

Using BG Toy-MC

- To avoid bias from BG statistics, BG toy-MC is used as reference instead of reconstructed events.
- For template PDF, thousand of BG toy-MC's are made and mean value of χ^2 is obtained.

	Reference	Fitting
signal	Reconstructed	Template
BG	1 Toy-MC	1000 Toy-MC's

➔ Toy-MC study

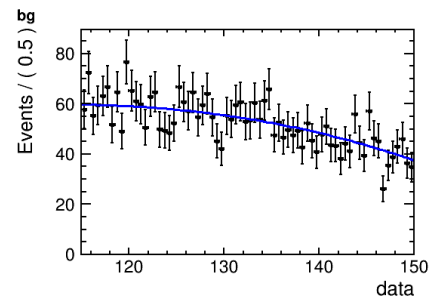
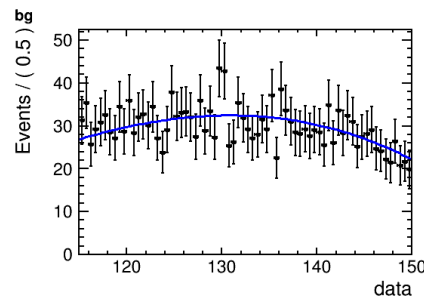
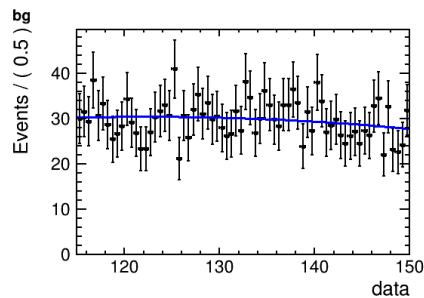
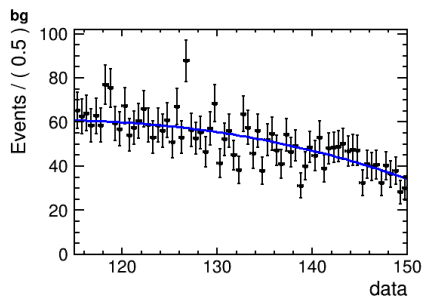
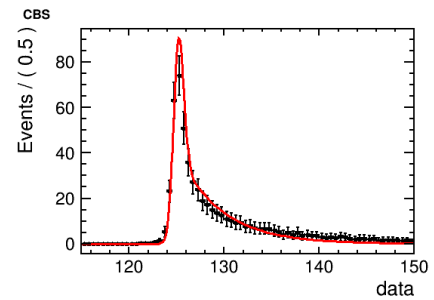
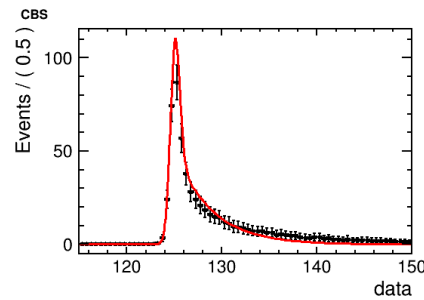
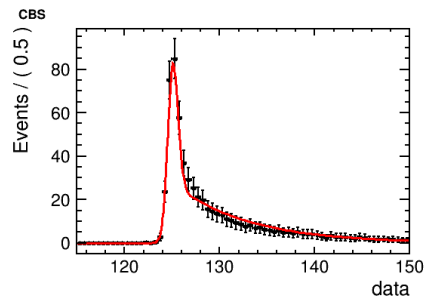
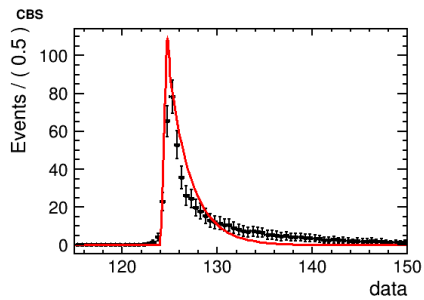
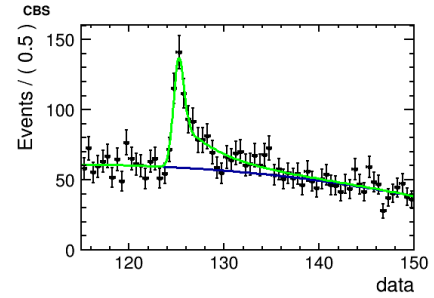
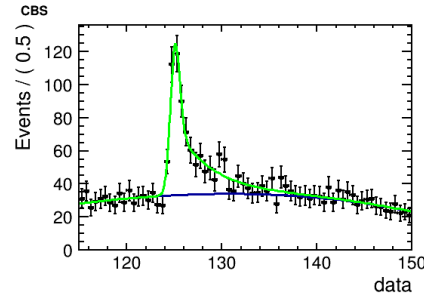
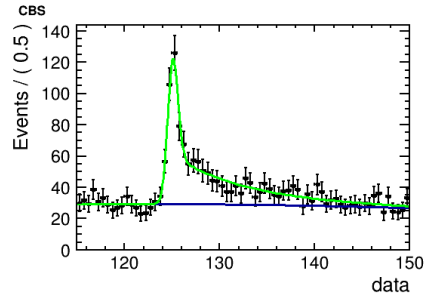
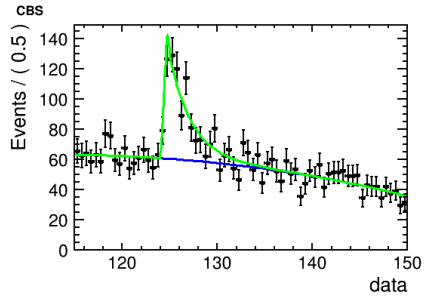


CP-mixture

- Problems : Fitting did not work well
 - ➔ Estimation of number of signal failed

	mean	sigma	bound	junc	peak	width	tail	Ysig	c1	c2	c3	YBG
(-0.95, -0.475)	124.73	0.0758	0.0324	0.0094	0	4.55 e-06	0.6497	418.39	-1.1036	0.6373	-0.0038	3760.4
(-0.95, -0.475)	125.42	0.5428	0.0701	0.6641	0	3.88 e-07	1.1928	674.60	8.1832	0.0092	-0.0002	2007.2
(-0.95, -0.475)	125.42	0.5012	0.1322	0.5464	0	1.86 e-05	1.1283	495.04	-1.9628	0.0342	-0.0001	2186.1
(-0.95, -0.475)	125.55	0.5391	0.1180	0.5763	0	4.87 e-05	0.3887	473.28	9.9999	1.3718	-0.0084	3734

Fitting



- Especially signal fitting does not work well.

Trial

- I tried to check distribution of number of signal.
- This is quite bad so I have to optimize fitting.

cosTZ_MC_sig

