

## Errata for the report of Compton tail fit

**Tomo pointed out a fixed Compton parameter should be the *position difference* between main peak and Compton tail to estimate the systematics errors.**

**In the previous report, I fixed the Compton-tail position itself. (But I will fit the kaon-triggered histogram by fixing the *difference*.)**

**→ The fitted values did not changed. The systematics error would be  $\sim\pm 1$  eV.**

## Simulation

[KHeX L-alpha (6464eV) 1st cycle]

Number of Events

Total = 110346 +/- 332.184

Normal = 86553

Compton = 13385 +/- 115.694

Rayleigh = 10155

Compton other + escaped Rayleigh = 253

Ratios

Compton/Total = 0.1213 +/- 0.00111023

Compton/(Normal+Rayleigh) = 0.138406 +/- 0.00127643

## 1st cycle KHeX La (6464 eV)

$\Gamma=20$  eV : Voigt profile

### Total fit with fixed Compton tail

Compton area = 13290

(Normal+Ray) area = 95892.5

Ratio

Compton/(Normal+Ray) = 0.138593

FCN=190.247 FROM MINOS STATUS=SUCCESSFUL 60 CALLS 118 TOTAL  
EDM=1.09751e-08 STRATEGY= 1 ERROR MATRIX

ACCURATE

EXT NO.	PARAMETER NAME	VALUE	PARABOLIC ERROR	MINOS ERRORS	
				NEGATIVE	POSITIVE
1	g mean [eV]	6.41354e+03	fixed		
2	g sigma [eV]	8.79800e+01	fixed		
3	t area	1.32900e+05	fixed		
4	t slope	8.75800e-01	fixed		
5	V mean [eV]	6.46487e+03	3.30832e-01	-3.30906e-01	3.30933e-01
6	V sigma [eV]	8.19596e+01	fixed		
7	V gamma [eV]	2.11093e+01	4.26216e-01	-4.26072e-01	4.26368e-01
8	V r	4.00000e+00	fixed		
9	V area	9.58925e+05	3.30784e+03	-3.30803e+03	3.30767e+03

## Simulation

[KHeX L-alpha (6464eV) 1st cycle]

Number of Events

Total = 110346 +- 332.184

Normal = 86553

Compton = 13385 +- 115.694

Rayleigh = 10155

Compton other + escaped Rayleigh = 253

Ratios

Compton/Total = 0.1213 +- 0.00111023

Compton/(Normal+Rayleigh) = 0.138406 +- 0.00127643

## 1st cycle KHeX La (6464 eV)

$\Gamma=20$  eV : Voigt profile

### Total fit with fixed Compton tail

Compton area = 13290

(Normal+Ray) area = 95917.6

Ratio

Compton/(Normal+Ray) = 0.138556

FCN=229.723 FROM MINOS STATUS=SUCCESSFUL 60 CALLS 120 TOTAL  
EDM=5.56596e-08 STRATEGY= 1 ERROR MATRIX

ACCURATE

EXT NO.	PARAMETER NAME	VALUE	PARABOLIC ERROR	MINOS ERRORS	
				NEGATIVE	POSITIVE
1	g shift [eV]	5.04600e+01	fixed		
2	g sigma [eV]	8.79800e+01	fixed		
3	t area	1.32900e+05	fixed		
4	t slope	8.75800e-01	fixed		
5	V mean [eV]	6.46420e+03	3.08805e-01	-3.08757e-01	3.08863e-01
6	V sigma [eV]	8.19596e+01	fixed		
7	V gamma [eV]	2.13726e+01	4.26568e-01	-4.26440e-01	4.26713e-01
8	V r	4.00000e+00	fixed		
9	V area	9.59176e+05	3.31183e+03	-3.31239e+03	3.31130e+03

modified place !