

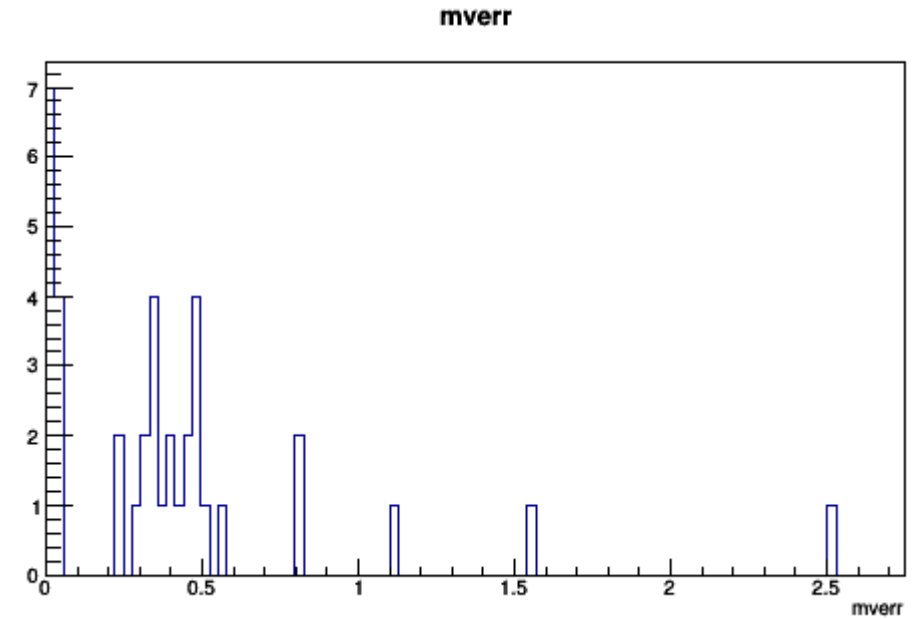
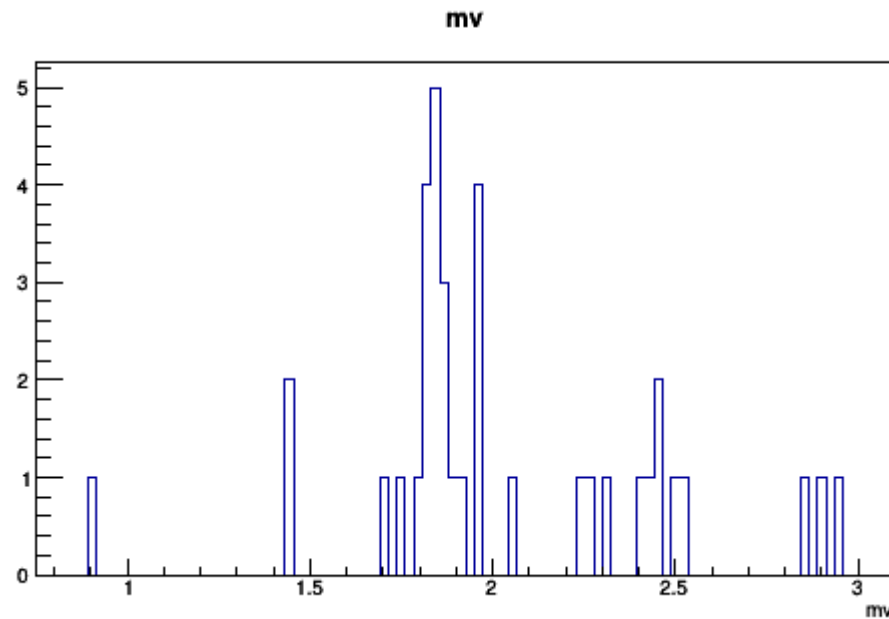
Weekly Report

2018-05-14

Kim, Hanbeom

Geant4 Simulation $m_\nu=1$ eV with detector resolution

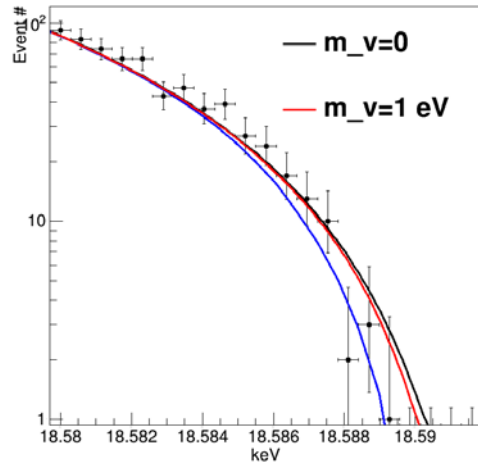
10^7 events generated from 18.3 keV: 37 events



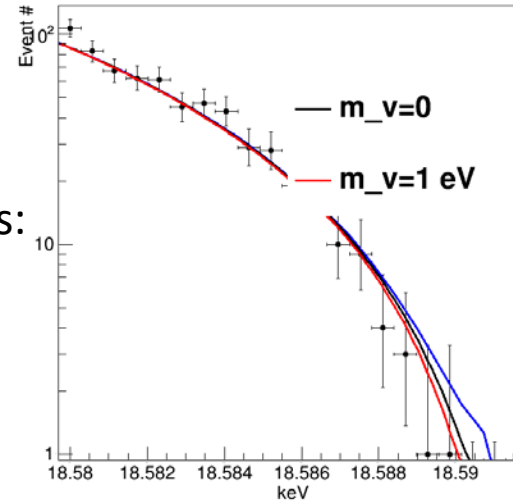
Event range/keV	# of events (0-endpoint)
18.3 -18.591	$\sim 1.3 \cdot 10^{12}$

Geant4 Simulation $m_\nu=1$ eV with detector resolution

10^7 events generated from 18.3 keV:



Largest neutrino mass:
 2.9 ± 0.2 eV
(2.94659 ± 0.228727)

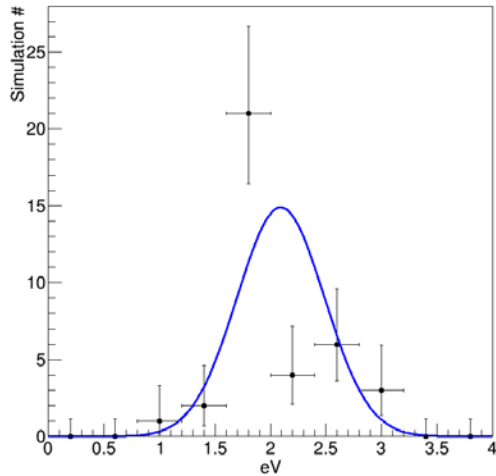


Smallest neutrino mass:
 0.9 ± 0.0 eV
(0.913194 ± 0.035312)

Neutrino mass error:
 $0.00220624 \sim 2.51008$

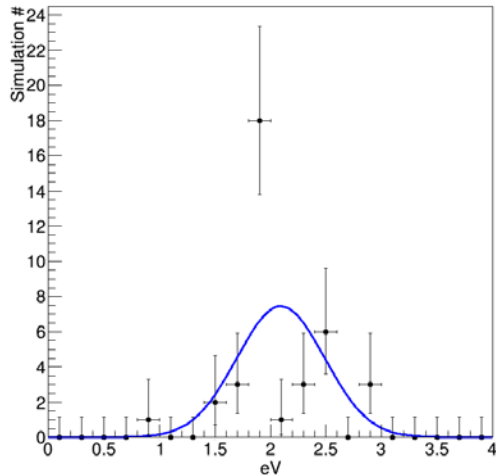
Geant4 Simulation $m_\nu=1$ eV with detector resolution

10^7 events generated from 18.3 keV: Ensemble average for 37 fittings



(10 bins)

- Unbinned fit
- Each data point has mean + error
-> Gaussian
- Convolution of data & Gaussian with undetermined parameters



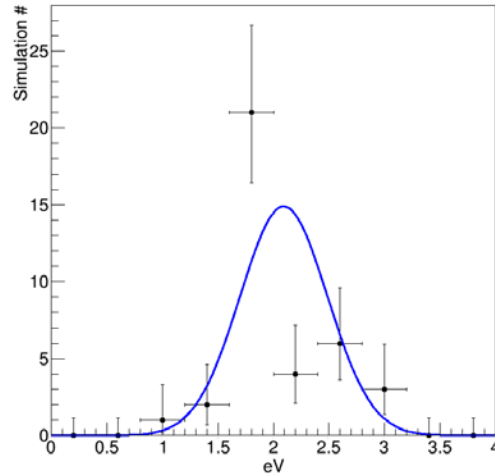
(20 bins)

Mean/eV	2.09204 ± 0.396215
Standard deviation/eV	0.396215 ± 0.0596019

Geant4 Simulation $m_\nu=1$ eV with detector resolution

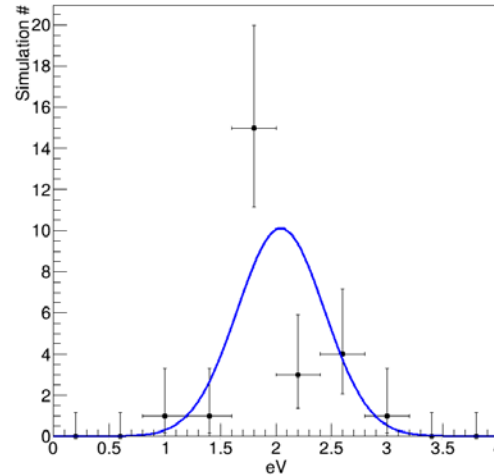
10^7 events generated from 18.3 keV: Ensemble average for 37 fittings

(10 bins)

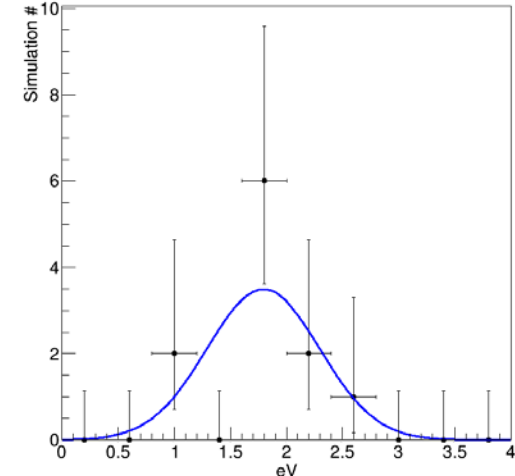


Simulation #:

37



25



11

Simulation #	Mean/eV	σ /eV
11	1.79398(± 0.17696)	0.502868(± 0.123472)
25	2.04389(± 0.10396)	0.394188(± 0.071946)
37	2.09204(± 0.08381)	0.396215(± 0.059602)

105호 방사선원



정체가 분명한 계측선원
-> 안전원에서 가져가서 보관
(목록 작성중)

105호 방사선원



훼손으로 이름이 훼손된 것
& 빈 용기
-> 안전원에서 가져가서 폐기
(계측선원 폐기는 안전원 측에서
알아서 한다고 함)

105호 방사선원



개봉선원 ?
-> 매우 오래됨. 70년대로 기재되어 있음

