

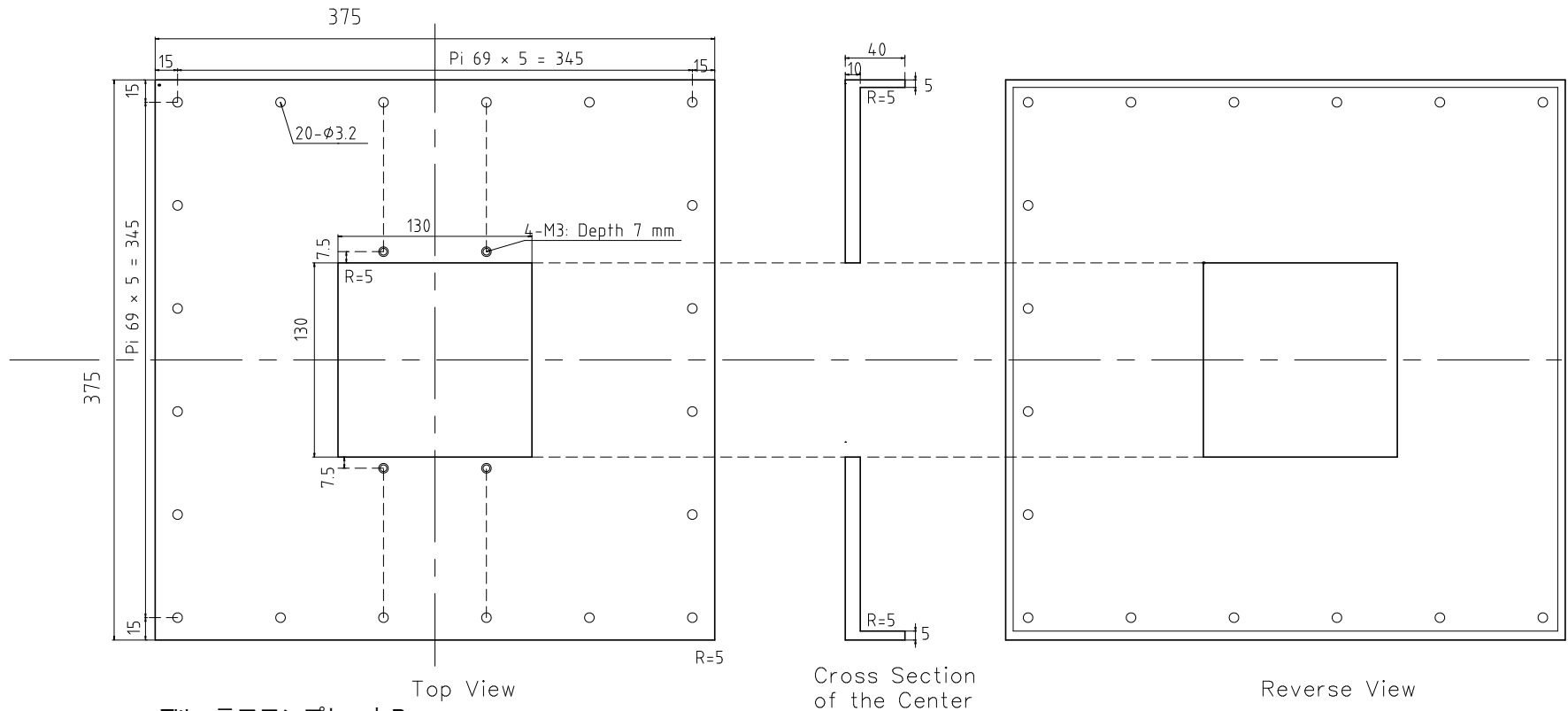
進捗報告

2017/11/11 – 11/21

- 0.3aテフロンふた設計 >> 日鈴に見積もり依頼
- 0.3a 11/09-11/18データ online display
- データベースXMASSデータ入力
- プラシン、エキシンエネルギー較正 using G4 vs Exp.

- 教育訓練11/15
- 日本物理学会 投稿11/21

0.3aテフロンふた設計 テフロンプレートB



Title: テフロンプレートB

SIZE 1/1

TEL 078-803-5661

FAX 078-803-5662

MATERIAL TEFLON

Hiroshi ITO

Graduate School of Science,

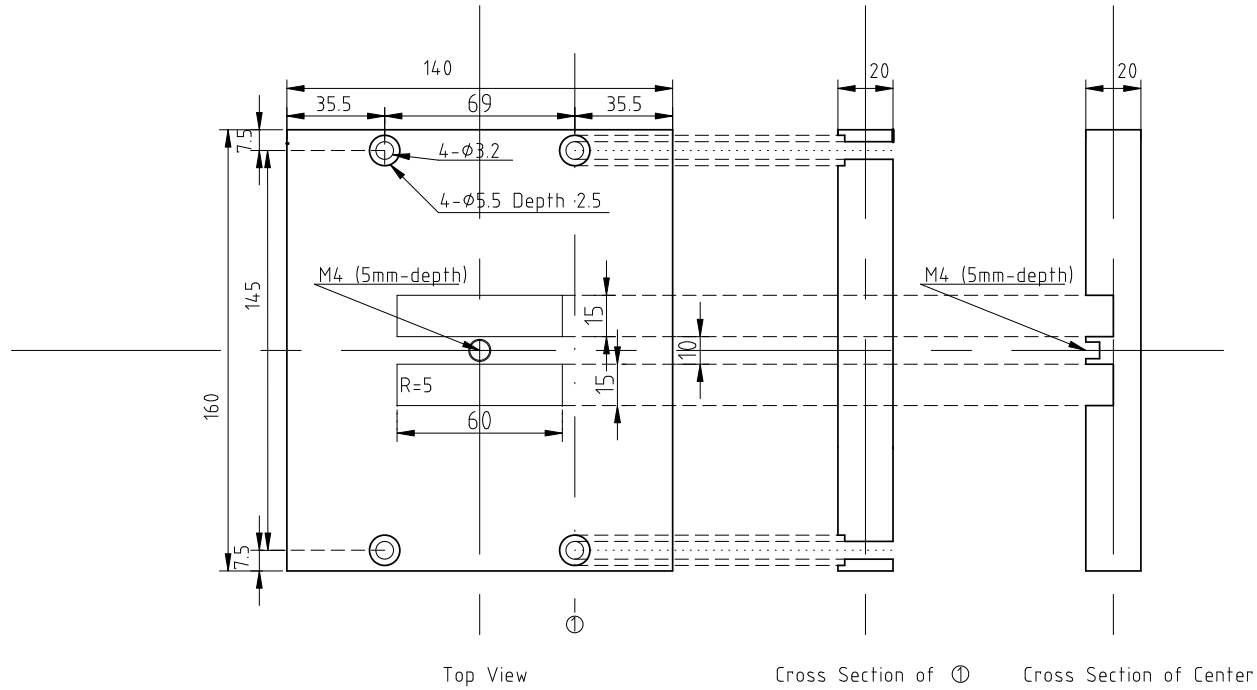
Kobe University

Mail: ito.hiroshi@crystal.kobe-u.ac.jp

材質: テフロン

個数: 1

0.3aテフロンふた設計 テフロンプレートBオプション



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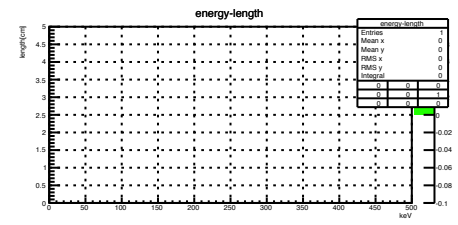
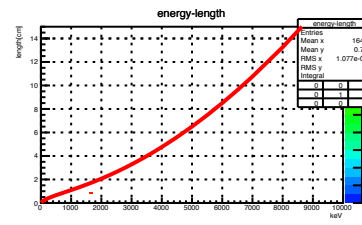
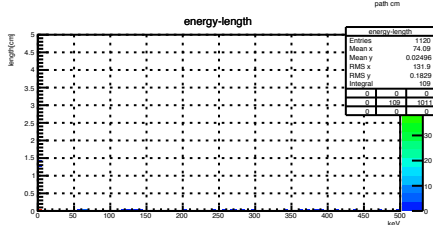
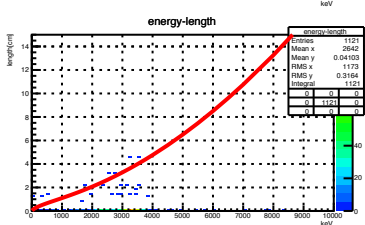
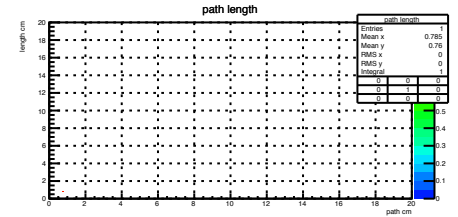
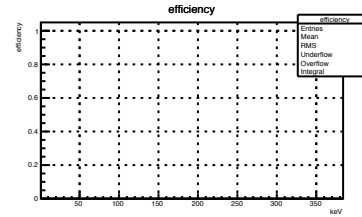
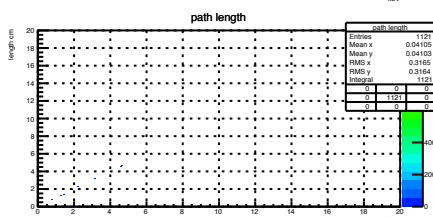
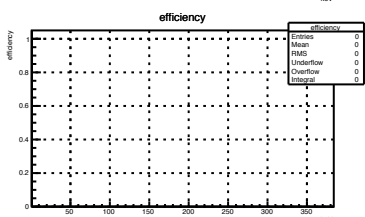
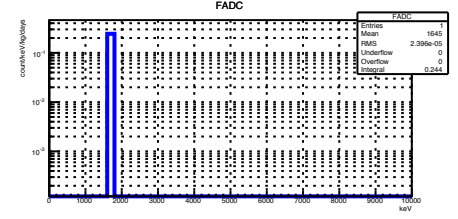
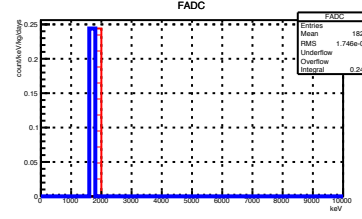
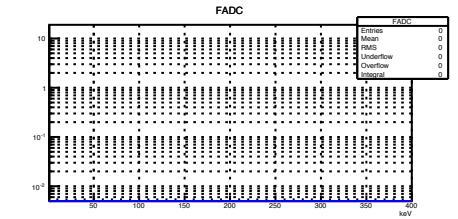
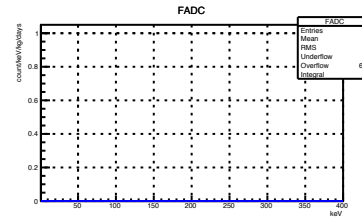
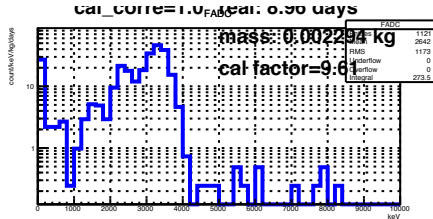
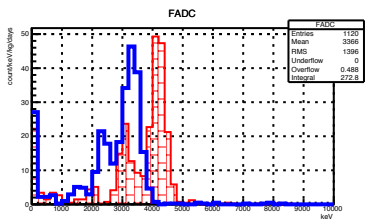
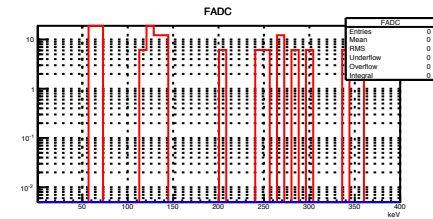
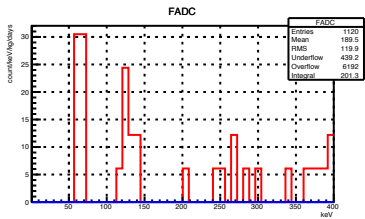
材質：テフロン
個数：1

Hiroshi ITO
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0.3a 11/09-11/18データ online display

nhit>0

nhit>3



データベース XMASSデータ入力

Persephone
Material Assay Database

Search Submit Edit Settings Login

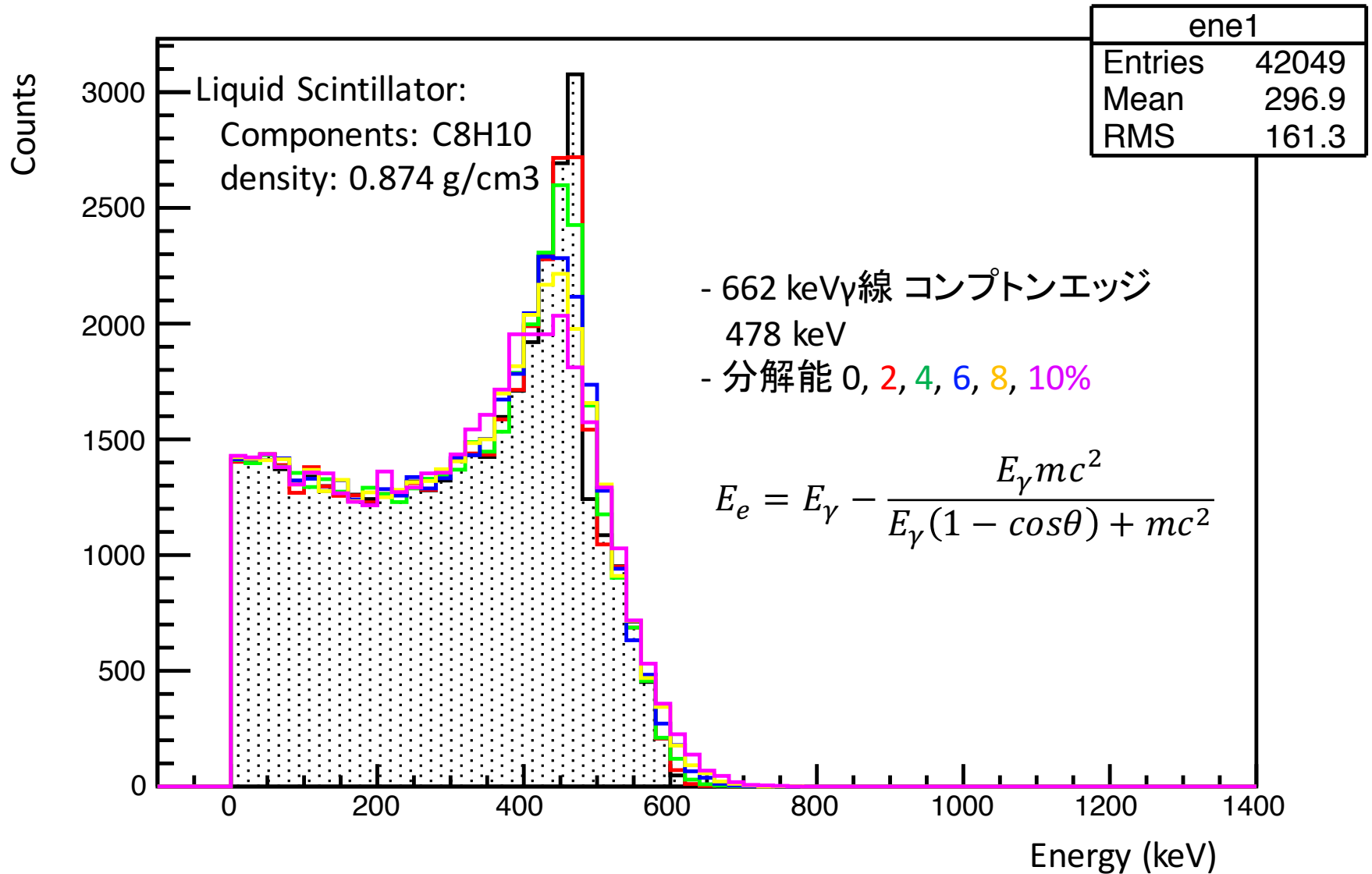
xmass

検索したワード = xmass
Total results: 33
test : undefined

Grouping	Name	Isotope	Amount	Isotope	Amount
▶ XMASS	thermometer(pt100)	Th-232	-64.3 mBq/kg	U-238	14.7 mBq/kg ...
▶ XMASS	Circulation pipe	Th-232	1.8 mBq/kg	U-238	-0.1 mBq/kg ...
▶ XMASS	Bootlace ferrules	Th-232	0.2 mBq/kg	U-238	-0.6 mBq/kg ...
▶ XMASS	Thermometer lid	Th-232	-500 mBq/kg	U-238	-500 mBq/kg ...
▶ XMASS	LED NSPB310A	Th-232	112 mBq/kg	U-238	-210 mBq/kg ...
▶ XMASS	GORE-TEX	Th-232	14 mBq/kg	U-238	65 mBq/kg ...
▶ XMASS	PMT holder spacer	Th-232	-0.08 mBq/kg	U-238	0.34 mBq/kg ...
▶ XMASS	Circulation teflon tube	Th-232	110 mBq/kg	U-238	400 mBq/kg ...
▶ XMASS	Part of boundary LED	Th-232	140 mBq/kg	U-238	-20 mBq/kg ...
▶ XMASS	PMT connect band 2	Th-232	-0.6 mBq/kg	U-238	8.3 mBq/kg ...
▶ XMASS	PMT connect band 1	Th-232	10 mBq/kg	U-238	3.2 mBq/kg ...
▶ XMASS	PMT holder bolt M8x25	Th-232	0.61 mBq/kg	U-238	0.74 mBq/kg ...
▶ XMASS	PMT holder bolt M20	Th-232	1.1 mBq/kg	U-238	0.47 mBq/kg ...
▶ XMASS	PMT band bolt 1	Th-232	-1.8 mBq/kg	U-238	6.5 mBq/kg ...

- 30個データを打った
- 検索機能にばぐ発見
複数検索BOXに入れると
OR検索される

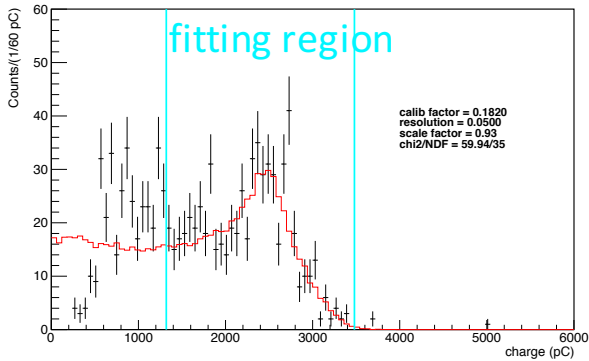
プラシン・エキシンエネルギー較正 G4 simulation



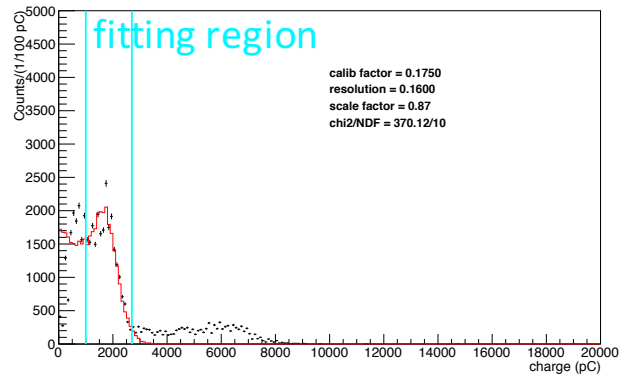
Fitting exp. data with G4 simulation

For plastic scintillator

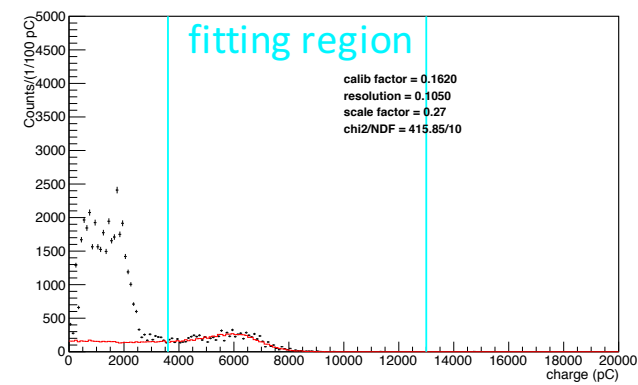
Cs137 gamma ray energy



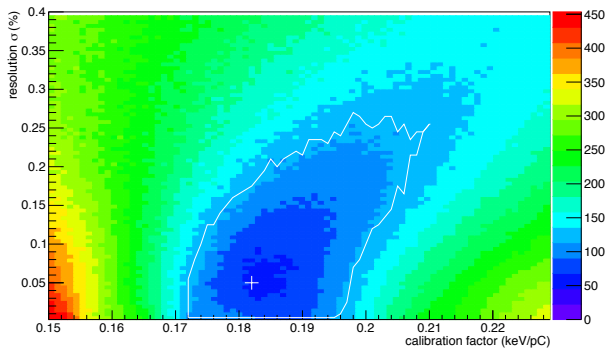
Na22 511-keV gamma ray energy



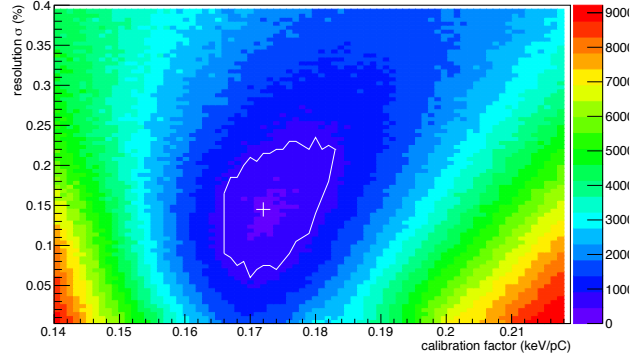
Na22 1274-keV gamma ray energy



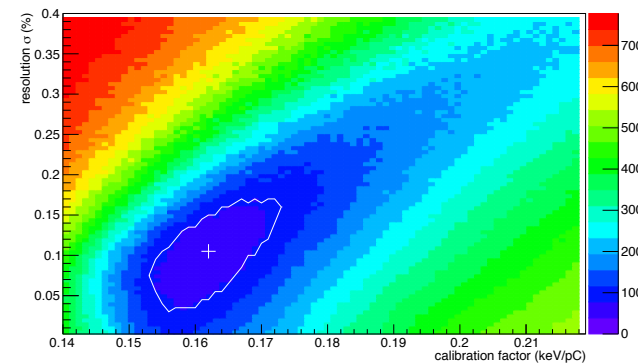
Plastic Scintillator Cs137(662 keV): PMT 1620V



Plastic Scintillator Na22(511 keV): PMT 1620V



Plastic Scintillator Na22(1274 keV): PMT 1620V

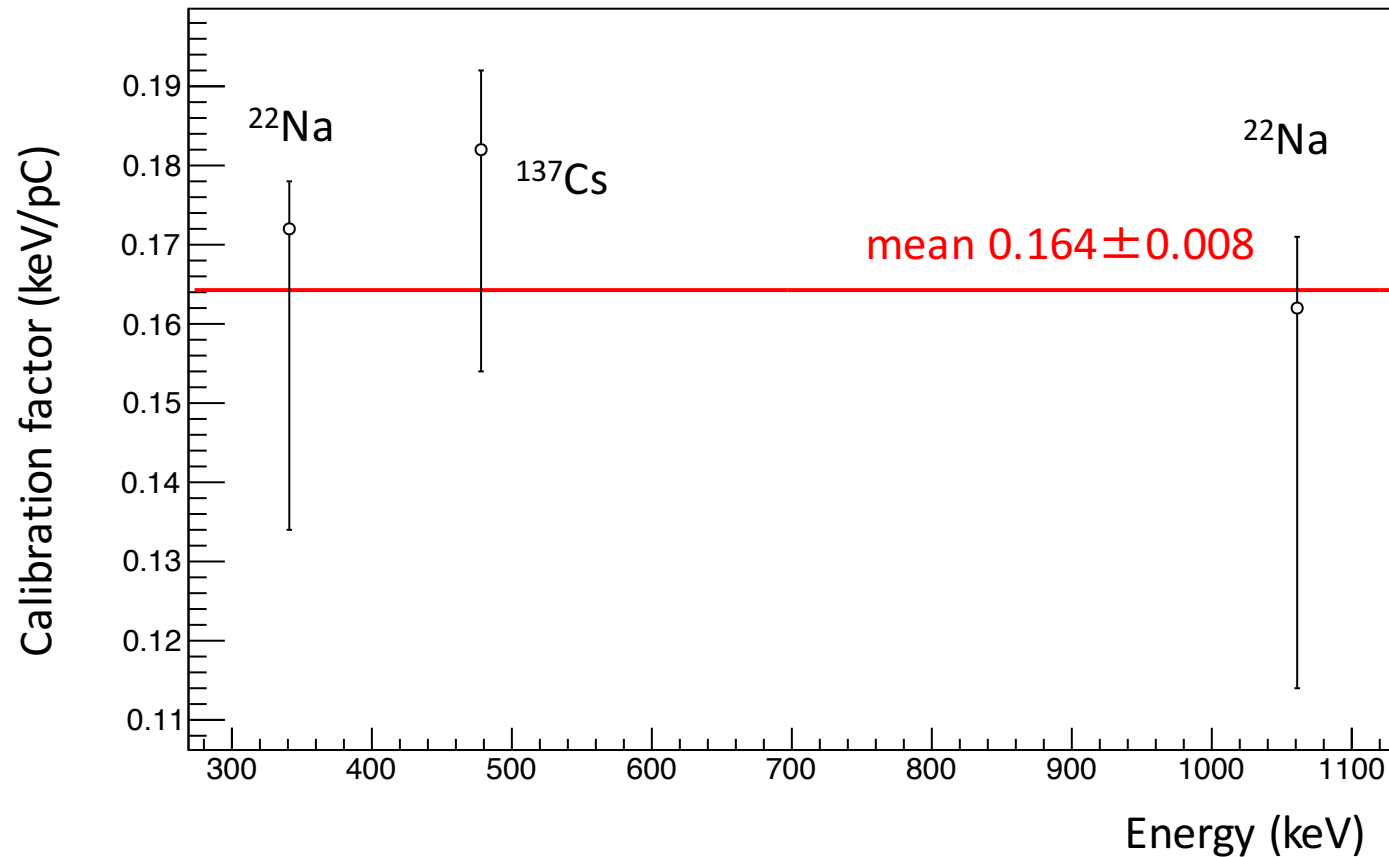


Z axis is χ^2 as shown in color.
White + is minimum χ^2 .
White line is 1σ region.

Energy Calibration factor correlation

For plastic scintillator

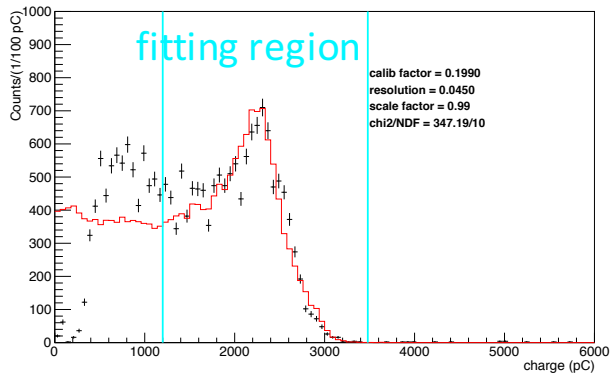
Plastic scintillator using PMT with 1620 V



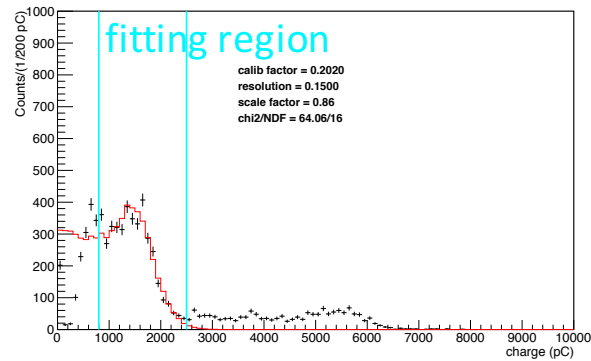
Fitting exp. data with G4 simu.

For Liquid scintillator

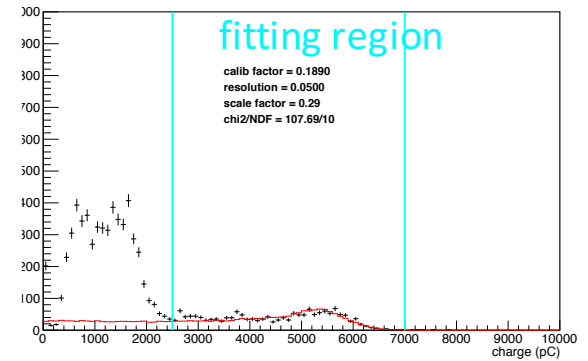
Cs137 662-keV gamma ray energy



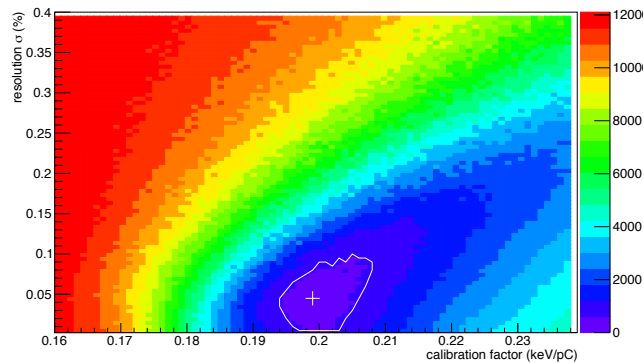
Na22 511-keV gamma ray energy



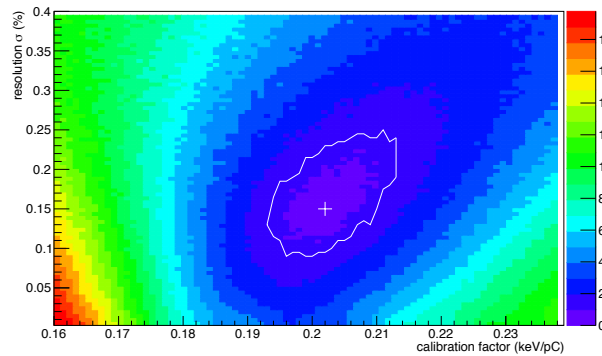
Na22 1274-keV gamma ray energy



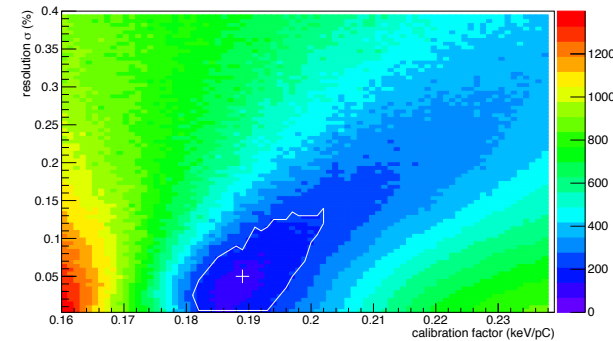
Liquid Scintillator (EJ-301) Cs137(662 keV): PMT 950V



Liquid Scintillator (EJ-301) Na22(511 keV): PMT 950V



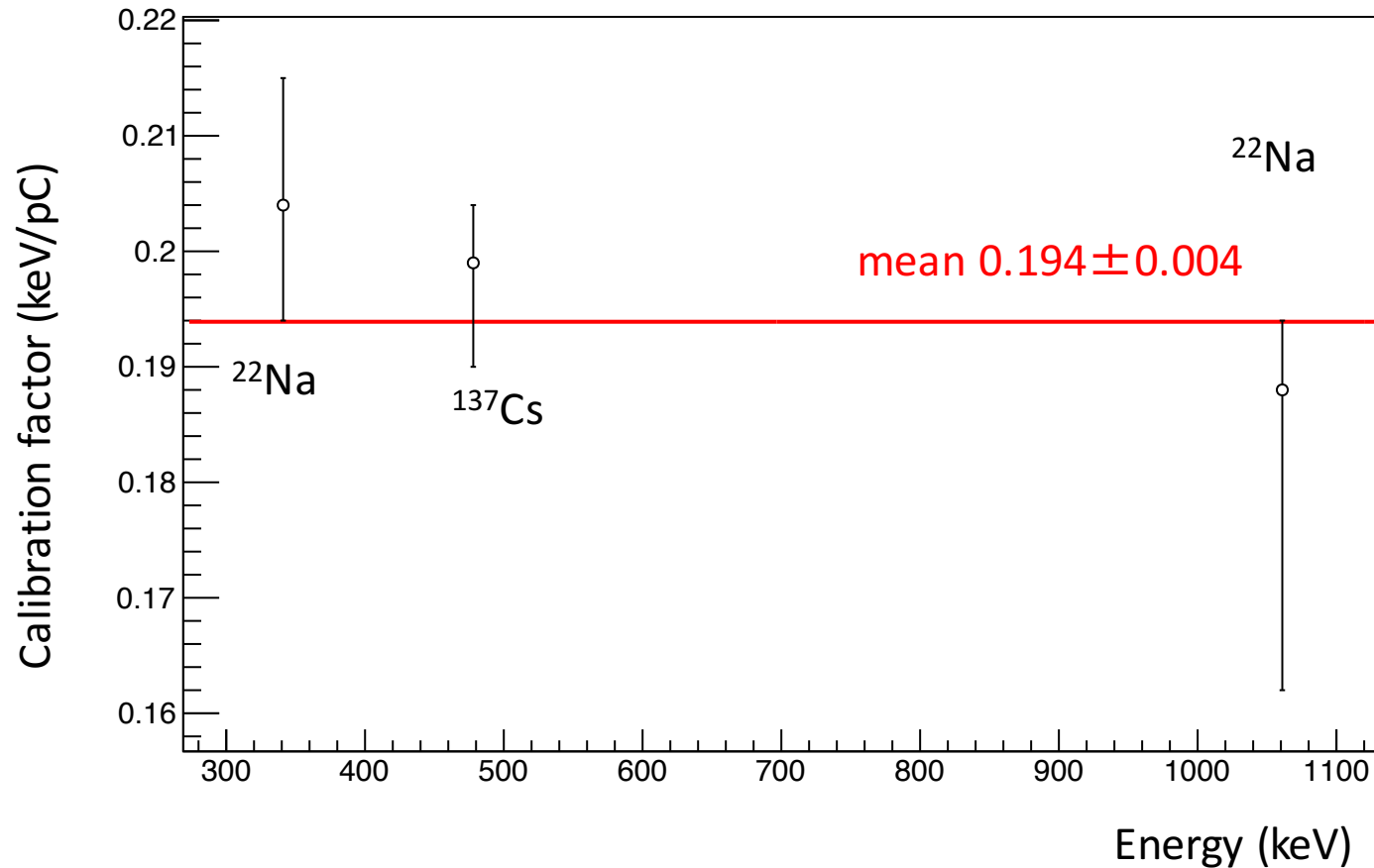
Liquid Scintillator (EJ-301) Na22(1274 keV): PMT 950V



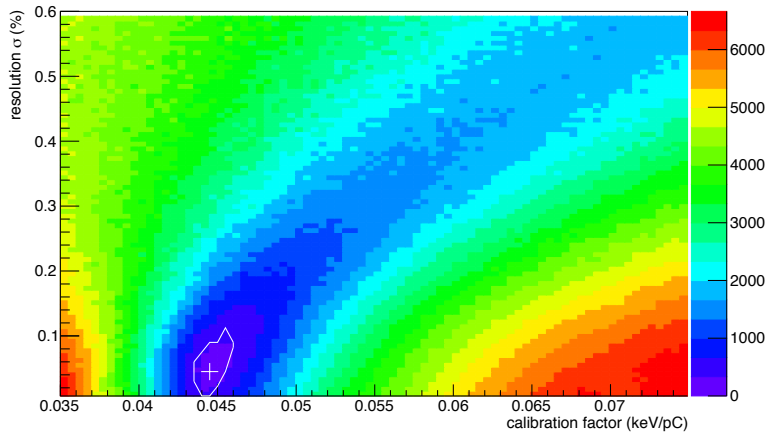
Z axis is χ^2 as shown in color.
White + is minimum χ^2 .
White line is 1σ region.

Energy Calibration factor correlation

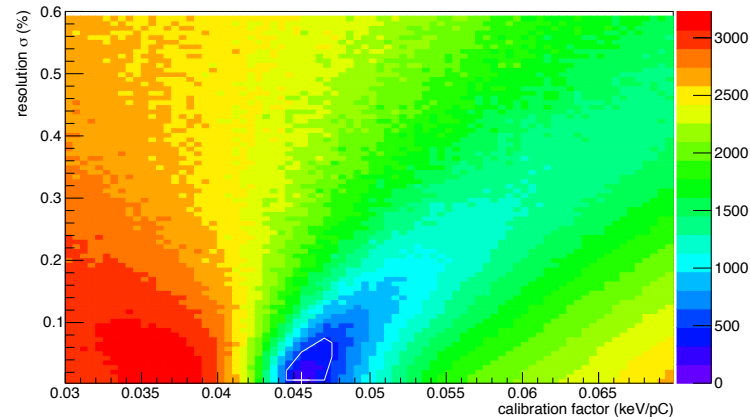
Liquid scintillator using PMT with 950 V



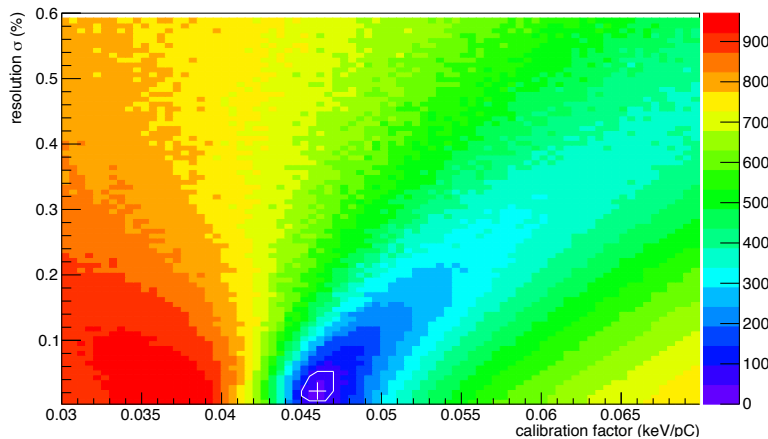
Liquid Scintillator (EJ-301) Cs137(662 keV): PMT 1240V (High Gain)



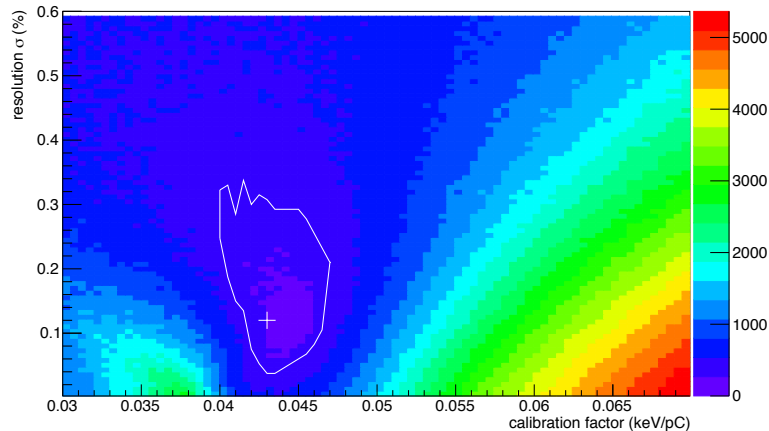
Liquid Scintillator (EJ-301) Na22(1274 keV): PMT 1240V



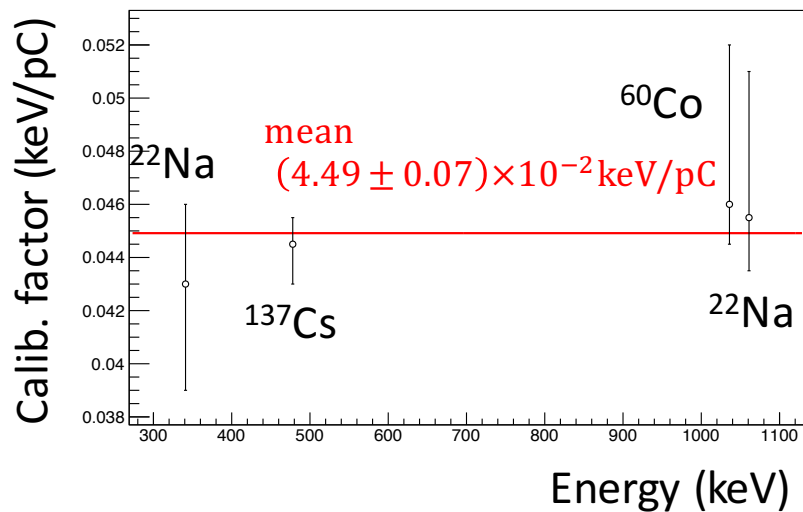
Liquid Scintillator (EJ-301) Co60(1248 keV): PMT 1240V



Liquid Scintillator (EJ-301) Na22(511 keV): PMT 1240V



Liquid scintillator using PMT with 1240 V



Result

	Mean Calibration Factor (keV/pC)	Resolution (σ) @341 keV
Plastic Scintillator @1620 V	0.164 ± 0.008	$0.15^{+0.09}_{-0.07}$
Liquid Scintillator (EJ-301) @950V	0.194 ± 0.004	$0.15^{+0.10}_{-0.06}$
Liquid Scintillator (EJ-301) @1240V	$(4.49 \pm 0.07) \times 10^{-2}$	$0.12^{+0.22}_{-0.08}$

Next Plan

11/28の神岡で仕事

Po-210使ってCalibration factor測定

Ra-226ソース作る？

日鈴木積みりをせっつく！

海事ビームテストのシフト

11/22に撤収！

12/8-9 ICRR共同利用研究成果発表会準備

スライド作成

0.3aサンプル測定についても発表に入れる

11/30夜

中野さんデータベース打ち合わせ