

Lab 2 # Cosmic Rays ^{9/25}

- Setup stage:

- objectives:

1.)

- Set 10mV for threshold

- measure individual thresholds

- 2.)
- measure each PMT's count.
 - Random $\frac{1}{3}$ true

3.) χ^2 dist of
mean count rates

4.) Calibrate the τ_{ec}
Preas PP \rightarrow delay
and full range

- Count rate collection :
- $t = 20 \text{ sec}$
- 10 - 20 data points

- 2 PMT \leftrightarrow all 4 sides
- screw rotate threshold
10-20 times

• $N \rightarrow$ counts

$\dot{N} \rightarrow$ count rate

$V_{TH} \rightarrow$ volts threshold

• PMT: Bar#1 Left :

• Trial # |
 $N = 227,753$
 $\dot{N} = 11,387.65$
 $V_{TH} = 70.8$

- Trial #2

$$V_{Th} = 75.4$$

$$n = 20,679$$

$$\dot{n} = 1,033.95$$

- Trial #3

$$V_{Th} = 80.2$$

$$n = 20,030$$

$$\dot{n} = 1001.5$$

- Trial #5

$$V_{Th} = 85.8$$

$$n = 19,302$$

$$\dot{n} = 965.1$$

• Trial # 6

$$V_{Th} = 90.1$$

$$n = 20,092$$

$$\dot{n} = 1004.6$$

• Trial # 7

$$V_{Th} = 97.5$$

$$n = 19,486$$

$$\dot{n} = 974.3$$

• Trial # 8

$$V_{Th} = 102.7$$

$$n = 19,790$$

$$\dot{n} = 989.5$$

• Trial # 9

$$V_{th} = 108.1$$

$$n = 21,197$$

$$\dot{n} = 1059.88$$

• Trial # 10

$$V_{th} = 111.7$$

$$n = 19854$$

$$\dot{n} = 992.7$$

• Trial # 11

$$V_{th} = 152.2$$

$$n = 18317$$

$$\dot{n} = 915.85$$

• Trial # 12

$$V_{th} = 201.7$$

$$n = 15848$$

$$\hat{n} = 792.4$$

• Trial # 13

$$V_{Th} = 161.9$$

$$n = 17,990$$

$$\hat{n} = 899.5$$

• Trial # 14

$$V_{Th} = 170$$

$$n = 17390$$

$$\hat{n} = 869.5$$

• Trial # 15

$$V_{Th} = 181.5$$

$$n = 17,621$$

$$\bar{n} = 881.05$$

• Trial # 16

$$V_{Th} = 190.1$$

$$n = 17,399$$

$$\bar{n} = 869.96$$

• Trial # 17

$$V_{Th} = 40.3$$

$$n = 386,887$$

$$\bar{n} = 19,344.35$$

• Trial # 18

$$V_{Th} = 45.6$$

$$n = 56,657$$

$$\bar{n} = 2,832.85$$

• Trial # 19 :

$$V = 50.2$$

$$n = 27,569$$

$$\bar{n} = 1378.45$$

• Trial # 20 :

$$V = 57.2$$

$$n = 26479$$

$$\bar{n} = 1323.95$$

• Trial # 21 :

$$V = 64.7$$

$$n = 21823$$

$$\bar{n} = 1091.15$$

• Trial # 22:

$$V = 71.8$$

$$n = 23969$$

$$\bar{n} = 1,198.45$$