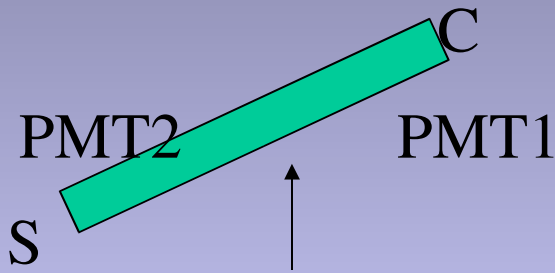


# **BGO Analysis**

## **Cosenza Group**

## To Measure Cerenkov light percentage ( runs 1681- 1722)



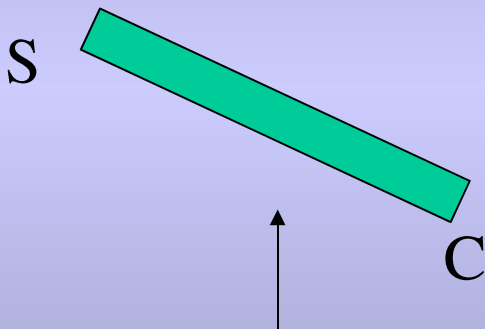
$$\theta > 0$$

$$\text{Counts } C1 = \eta \text{ cere1} + \eta \alpha \text{ sci1}$$

$$\text{Counts } S1 = \gamma \text{ sci1}$$

filter efficiency  $\rightarrow \alpha$

geometrical factors  $\rightarrow \eta, \gamma$



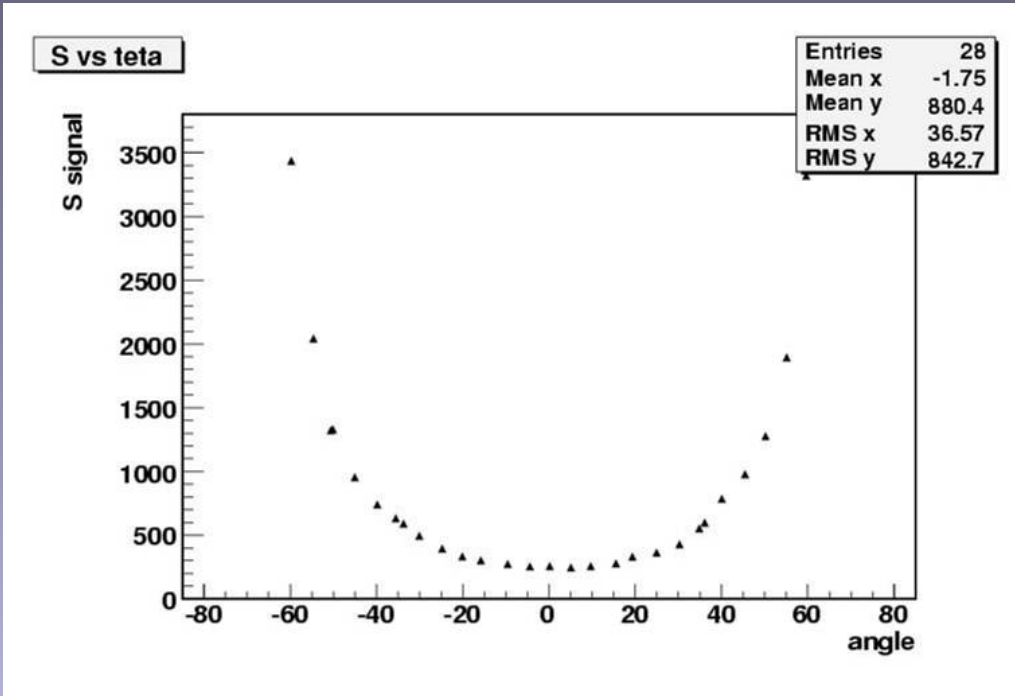
$$\theta < 0$$

$$\text{Counts } C2 = \eta \alpha \text{ sci2}$$

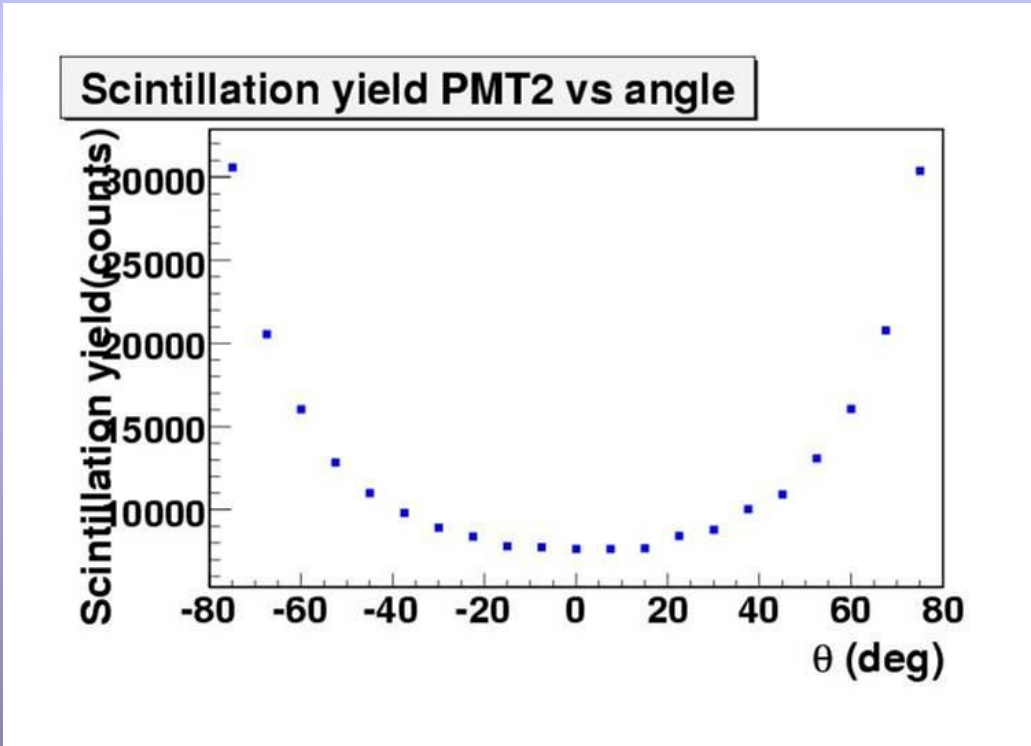
$$\text{Counts } S2 = \gamma \text{ sci2}$$

$$\text{Counts } C2 / \text{Counts } S2 = \eta \alpha / \gamma = K$$

$$\eta \text{ cere1} = \text{Counts } C1 - K \text{ Counts } S1$$

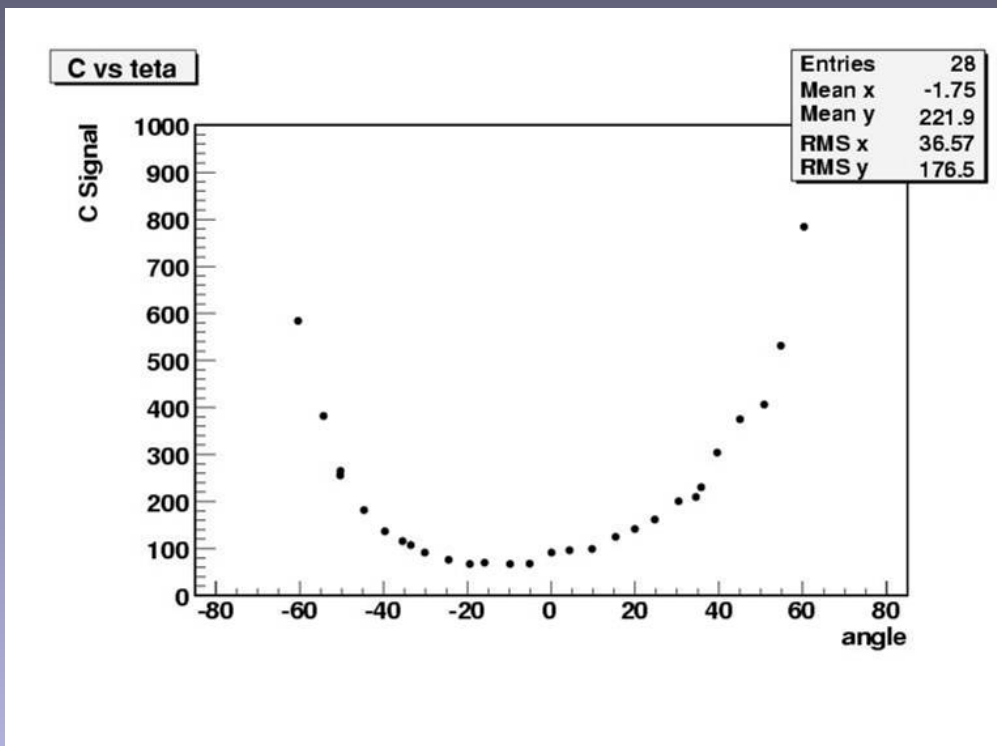


PMT2 – data

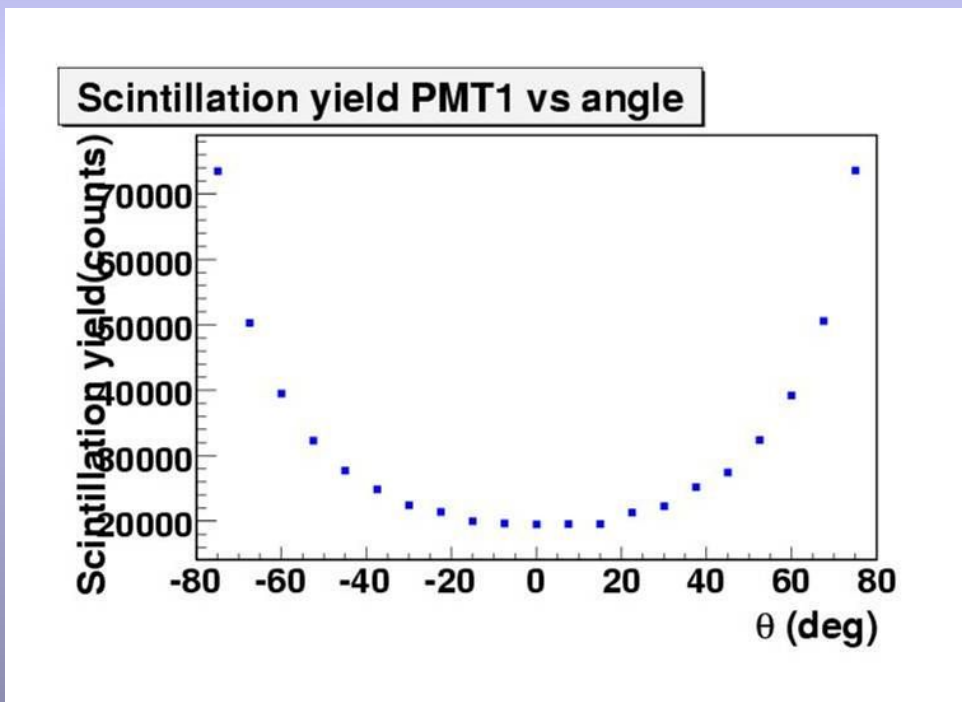


Simulation:

scintillation on PMT2 – no filter- no cookie



PMT1 – data

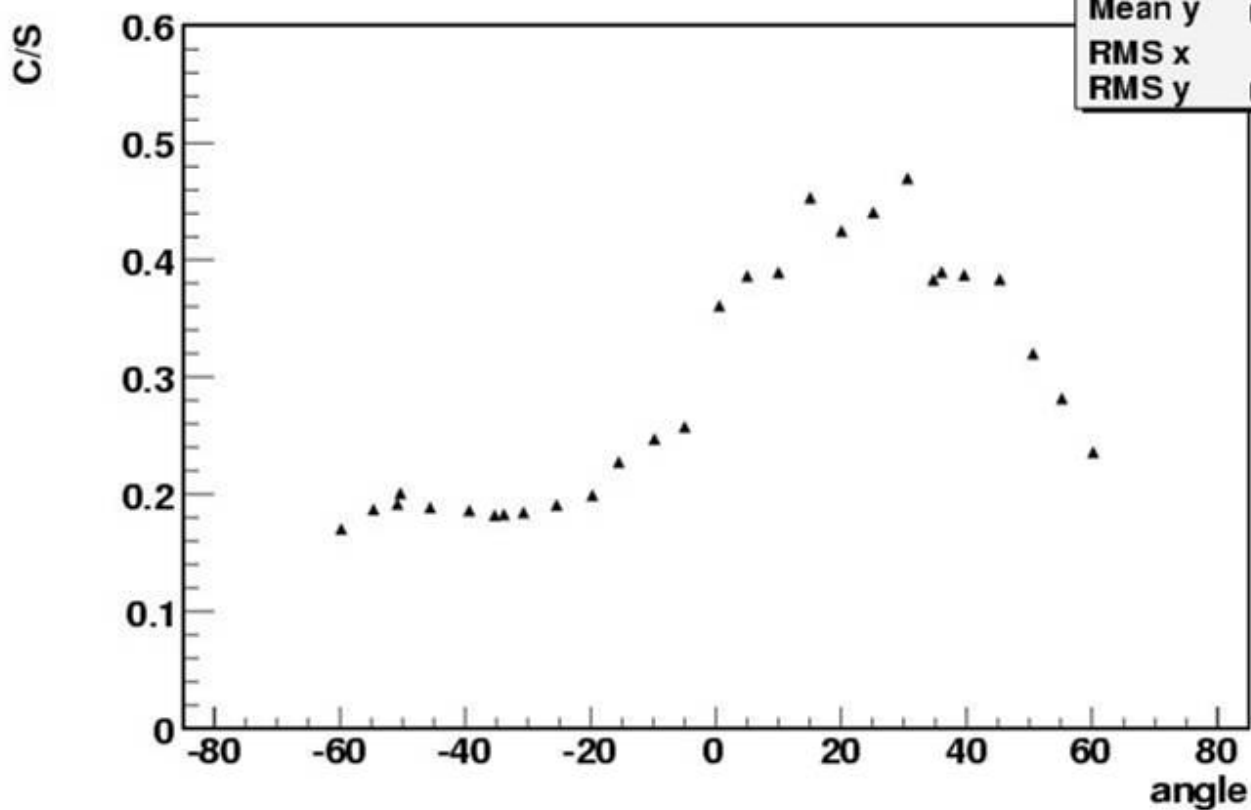


Simulation:

scintillation on PMT1 – no filter- no cookie

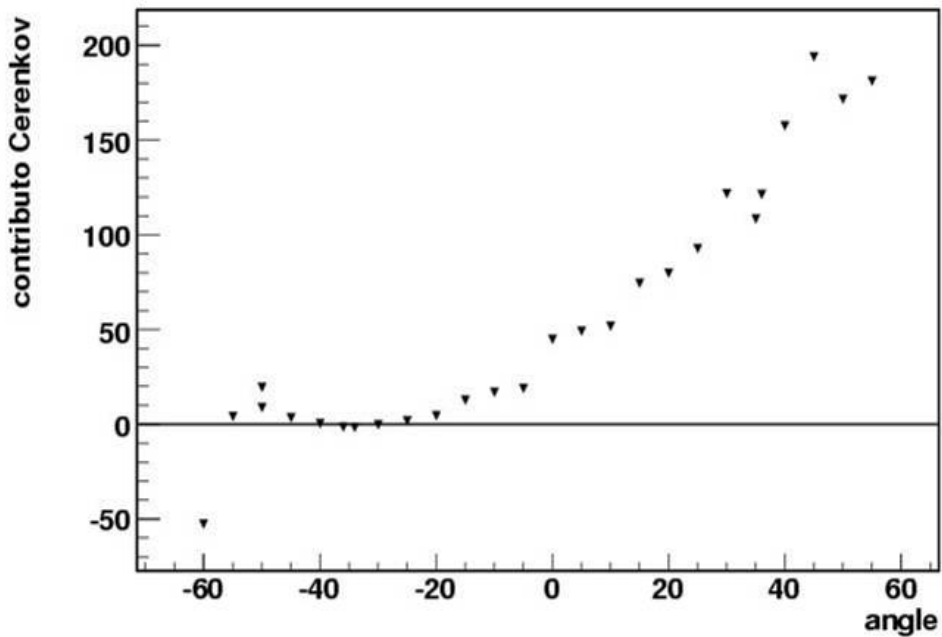
C/S vs teta

Entries	28
Mean x	-1.75
Mean y	0.2889
RMS x	36.57
RMS y	0.1013



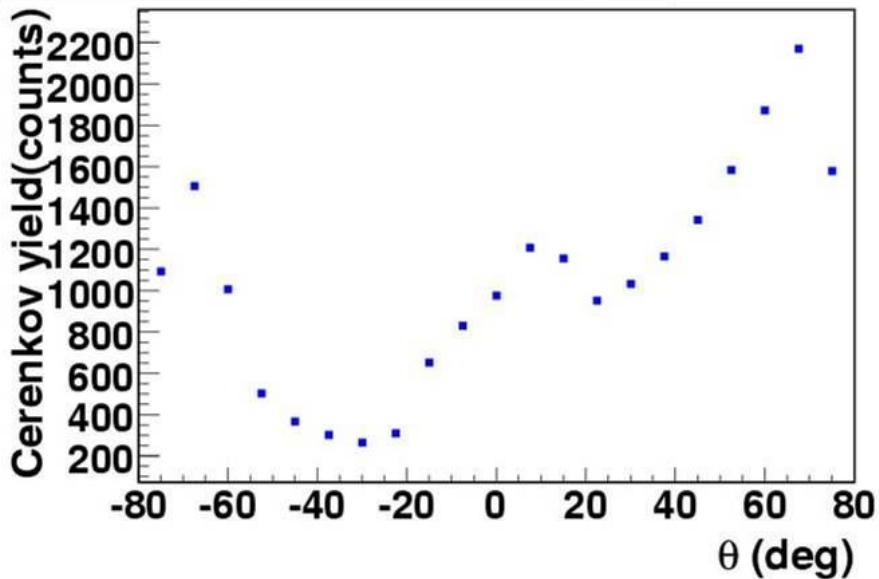
From data

Graph



Cerenkov contributions from data – PMT1

Cerenkov yield PMT1 vs angle



Simulation:  
cookies – no filter