

**(Some) BGO results**  
**Cecilia Voena**  
**INFN-Roma1**

# Runs, conditions, cuts

- **Pions 200 GeV**

runs 1613-1642

OSC1-ADC26 (Left, thin side) HV@1500 : Yellow filter

OSC2-ADC25 (Right, thick side) HV@1800: UV filter

OSC scale = 2ns/sample

- **Electrons 50 GeV**

runs 1681-1705

as above but HVLeft@1300 HVRight@1700

gate width closes 10ns after pulse start

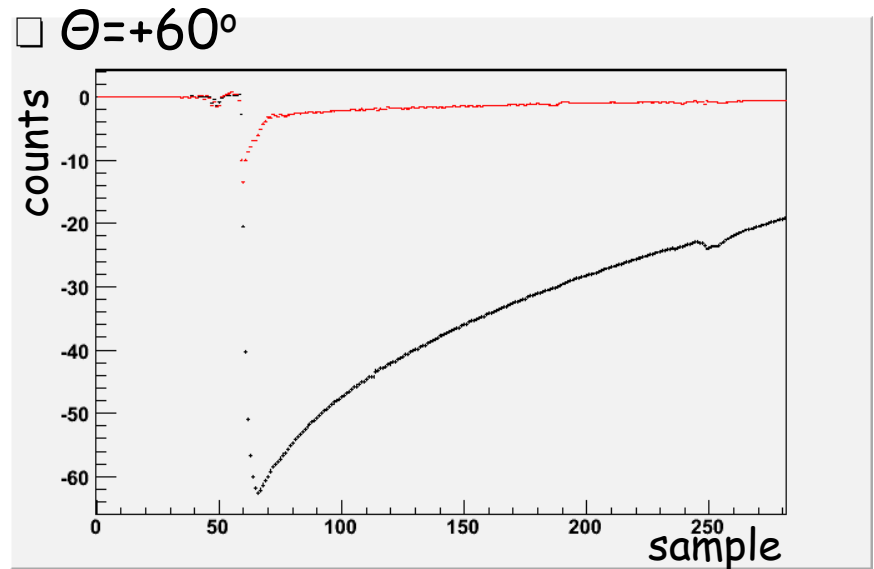
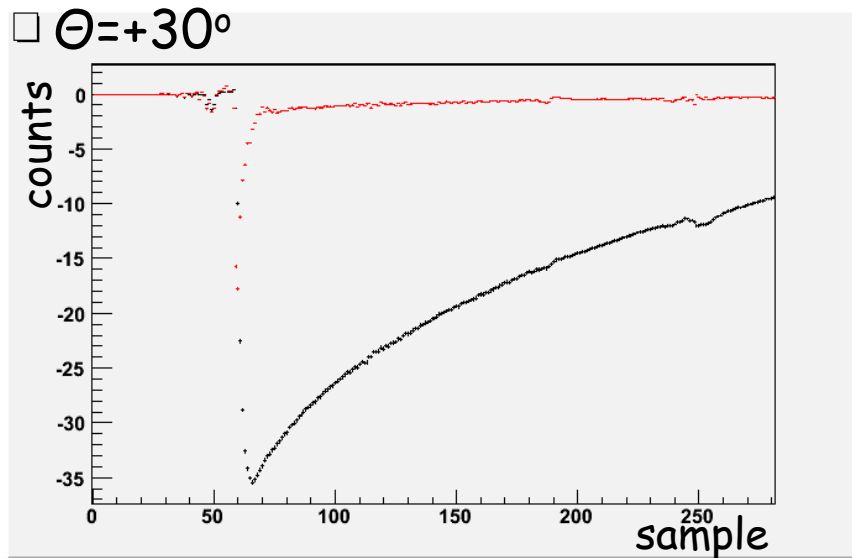
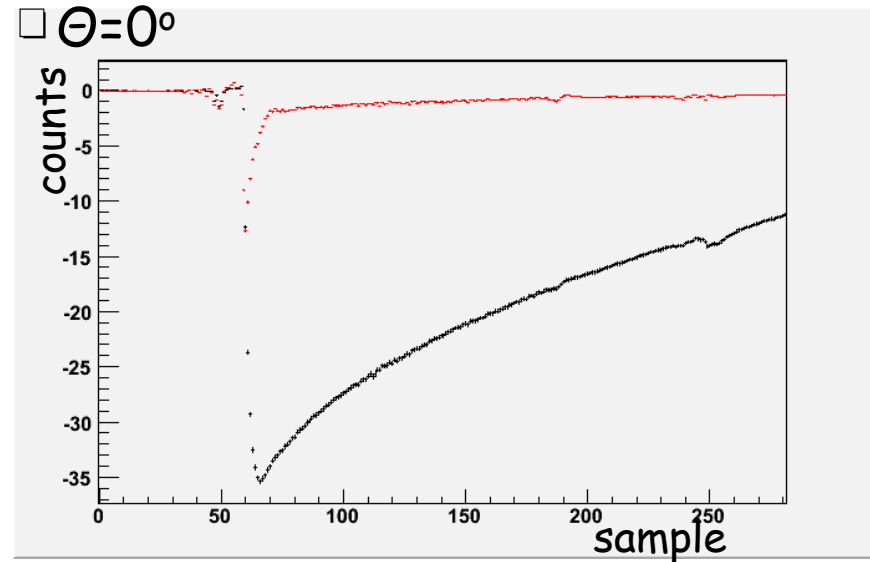
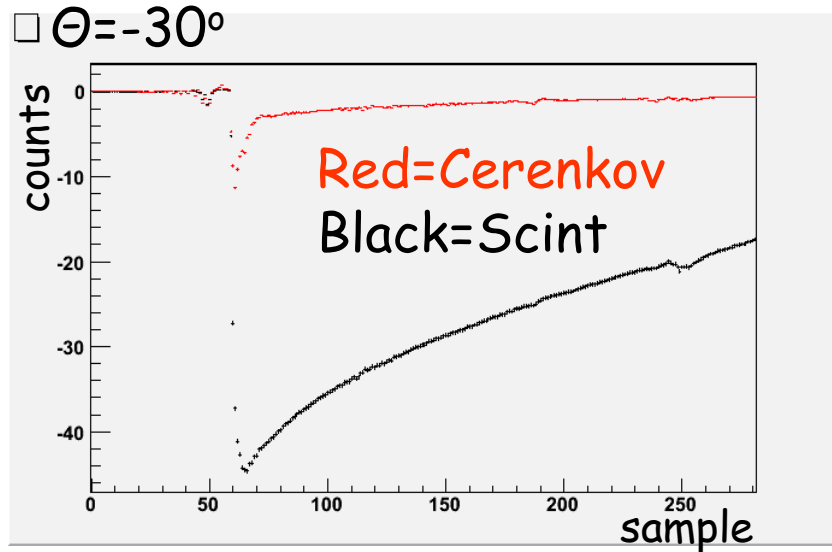
## Cuts:

remove events with clipped OSC signals

2sigma window in the beam chamber distributions

# Pions

# Some oscilloscope distributions

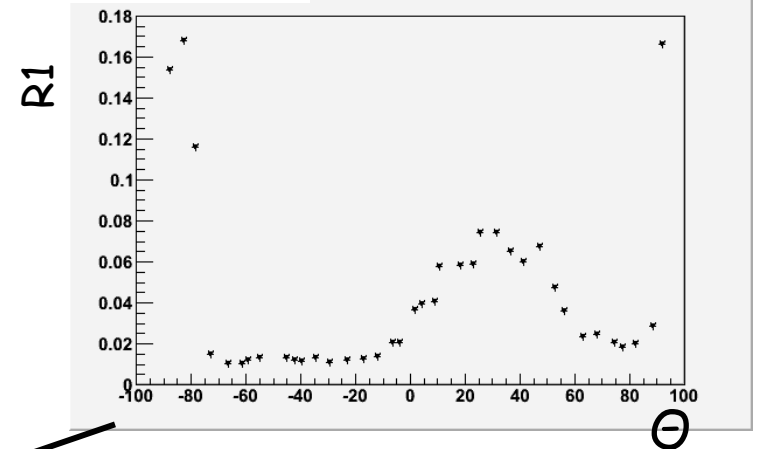
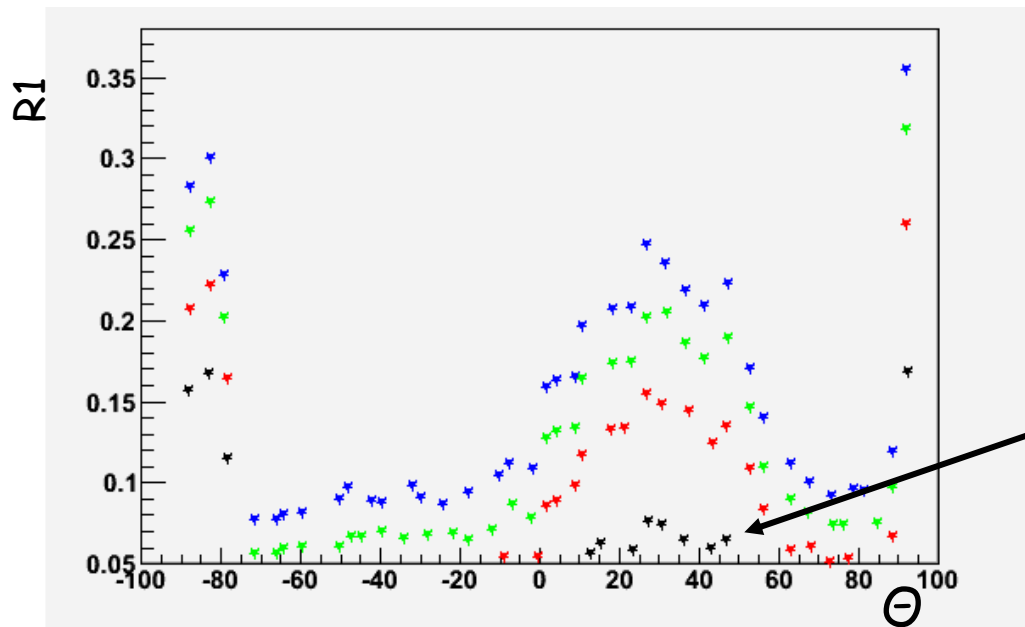


# Cerenkov contribution from OSC

$R1 = \text{Charge integrated in first } N \text{ ns} / \text{All charge integrated}$

Cerenkov contribution

- From the average signal distributions:  
(i.e. integrating run by run profile histos)



Blue=10ns  
Green=8ns  
Red=6ns  
Black=4ns

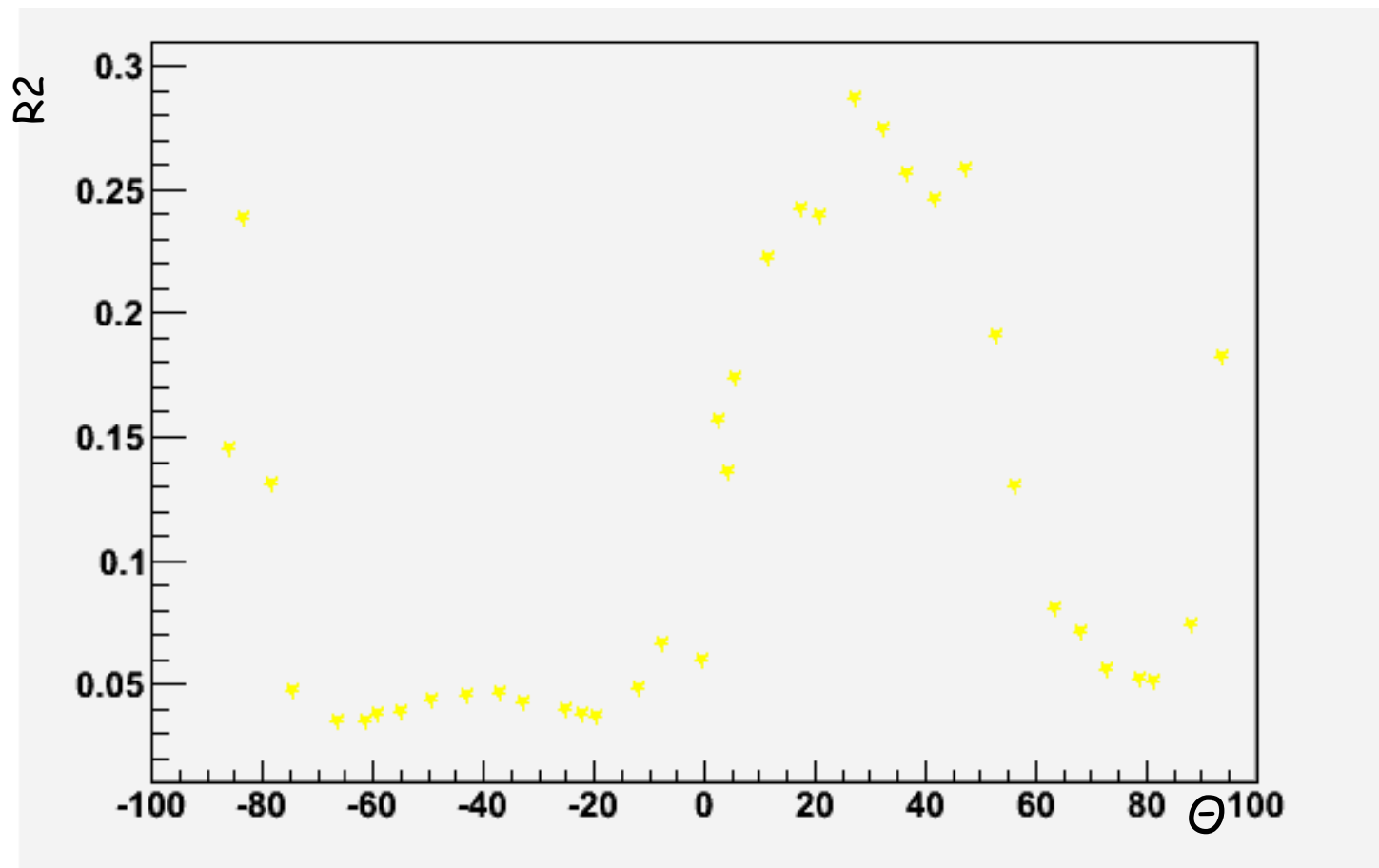
# Cerenkov contribution from OSC(2)

$R2 = \text{Charge integrated in first } N \text{ ns} / \text{Charge integrated in } [160, 564] \text{ ns}$

Cerenkov+Scint  $\nearrow$

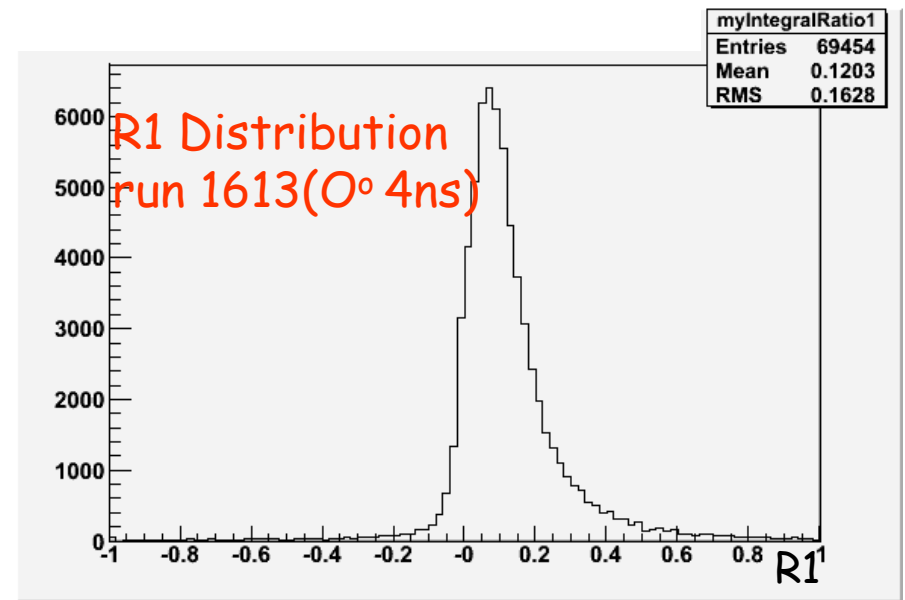
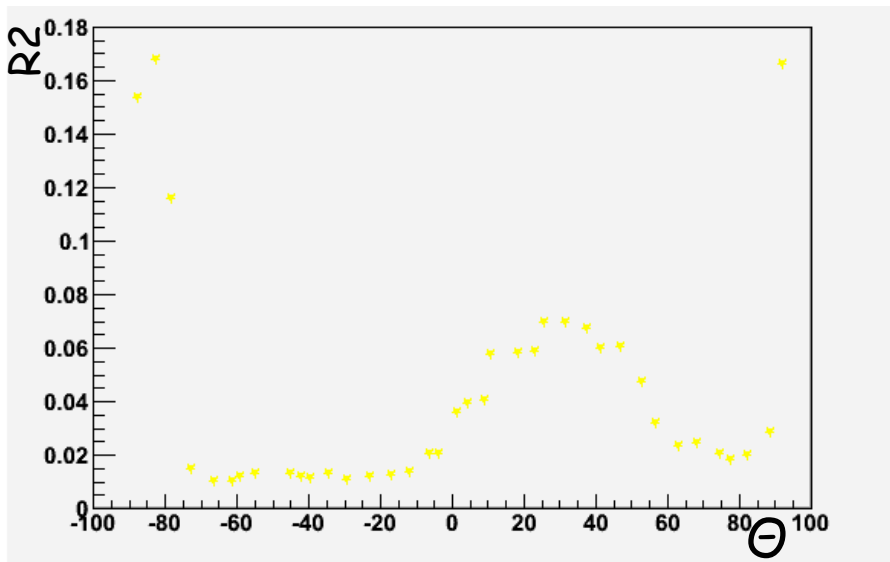
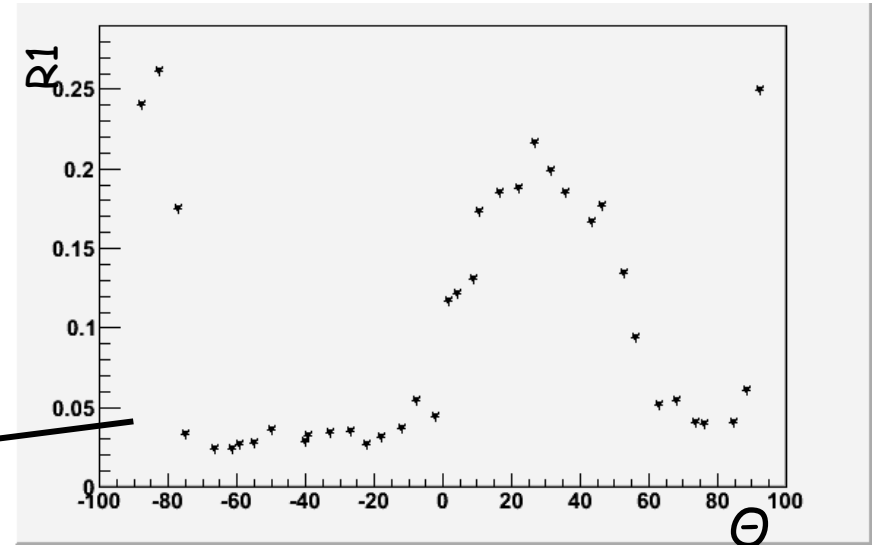
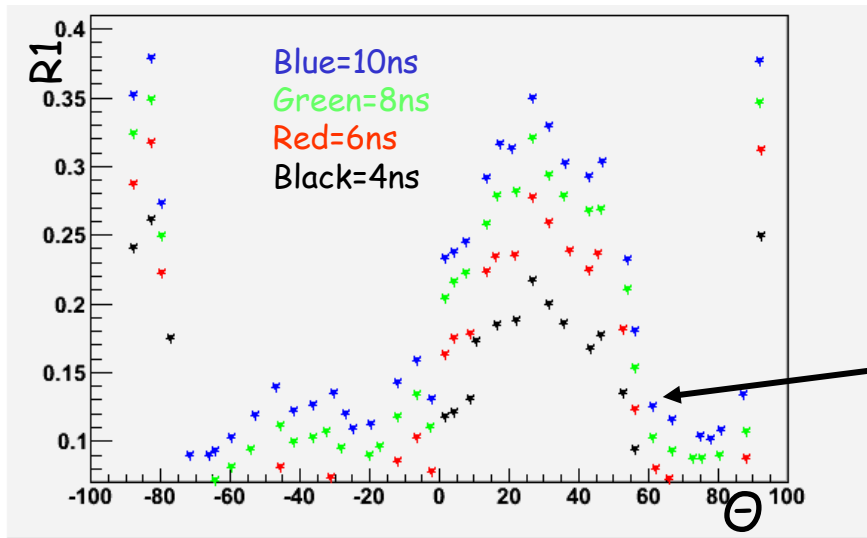
Scint only  $\uparrow$

- From the average signal distributions:



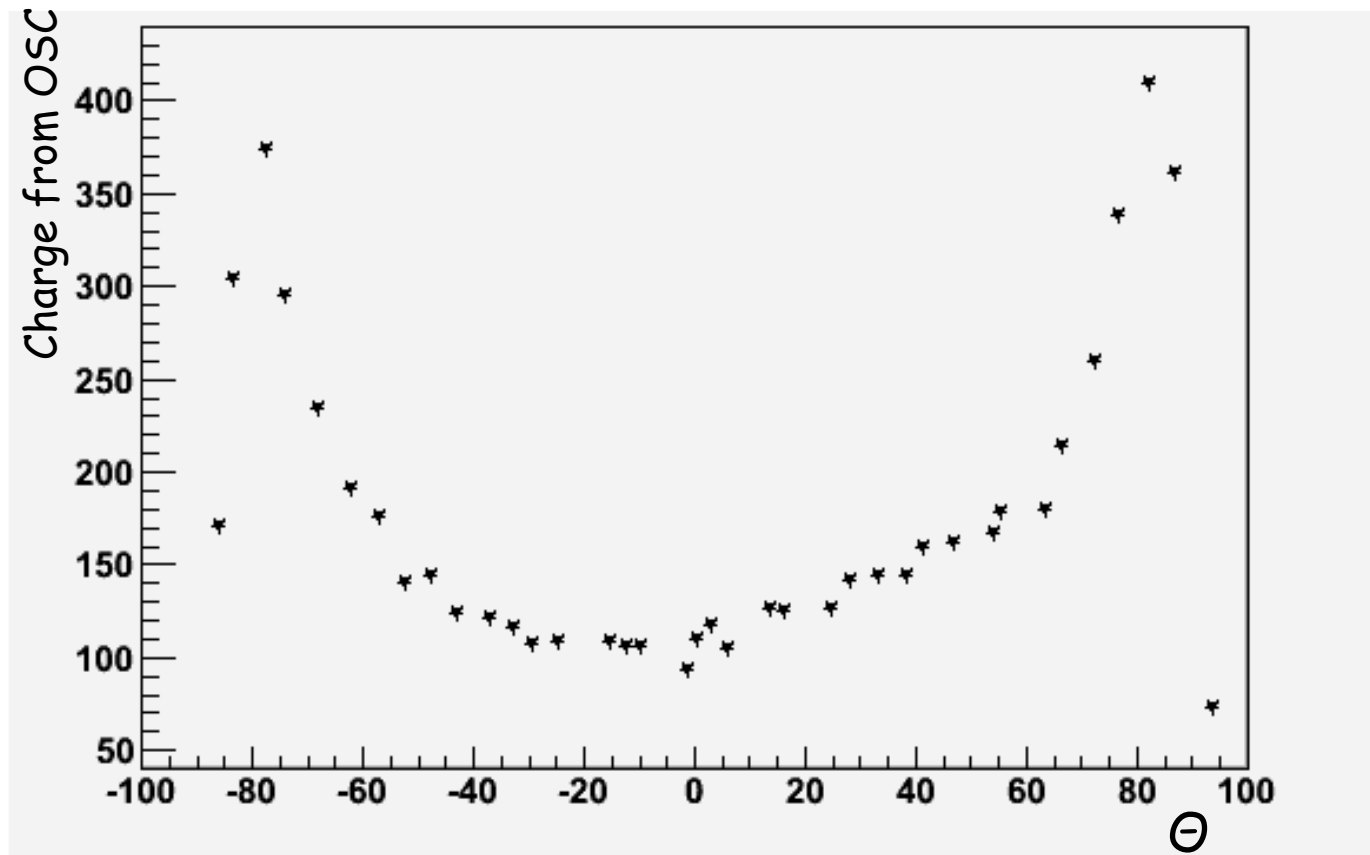
# Cerenkov contribution from OSC(3)

- Ratios computed event by event



# Total integrated charge vs theta

Cerenkov side (OSC2)

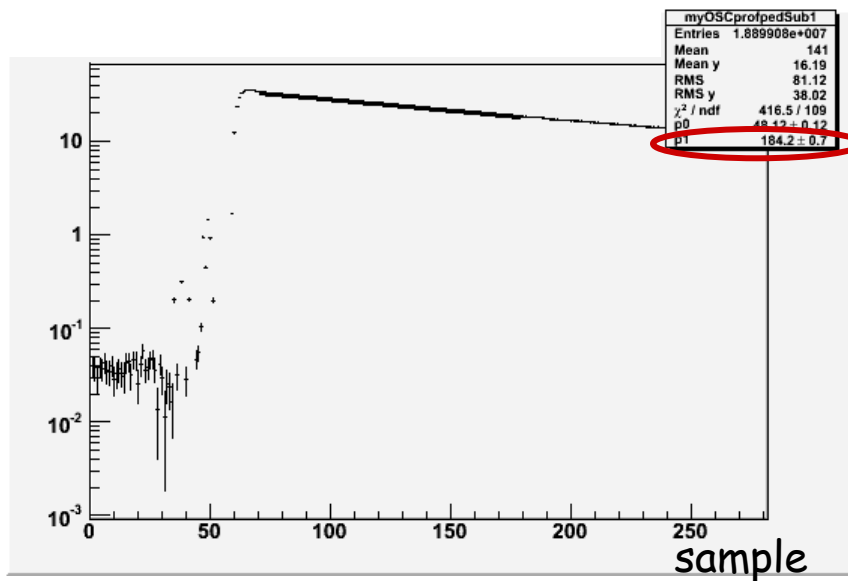




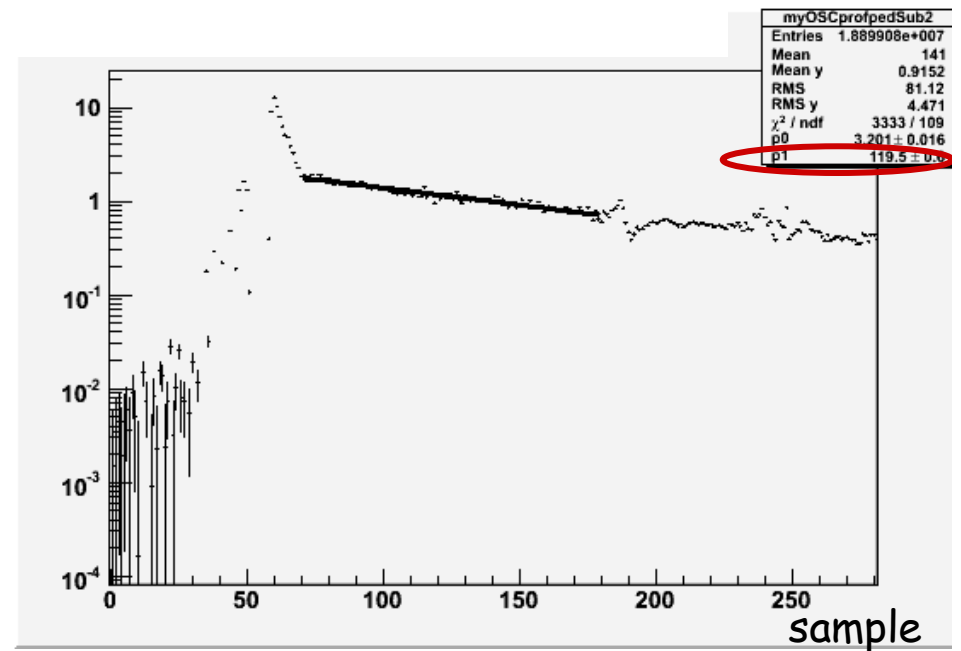
# BGO decay time

Zero degrees  
2ns/sample

OSC1 (Scintillation)



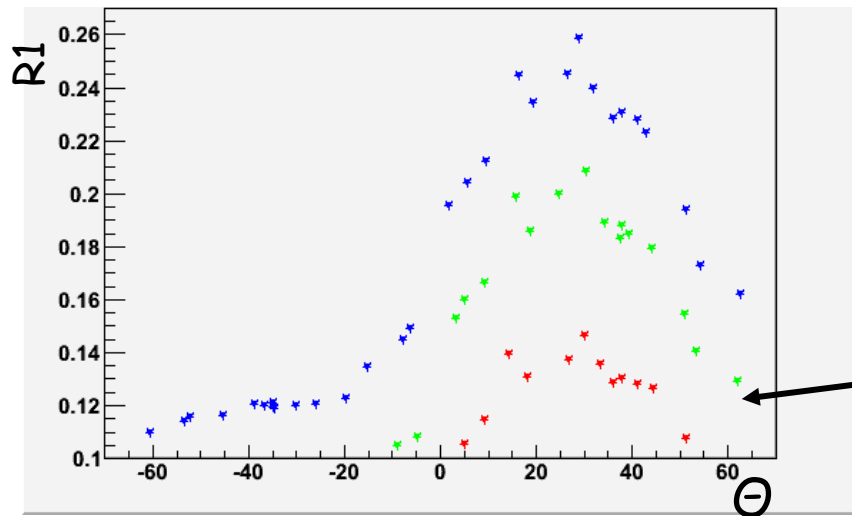
OSC2 (Cerenkov)



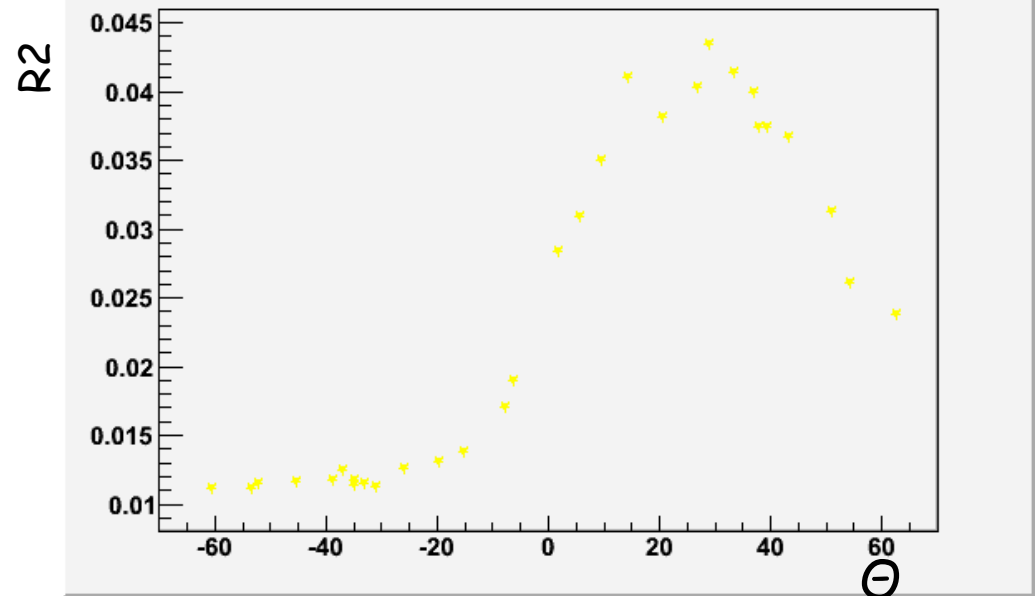
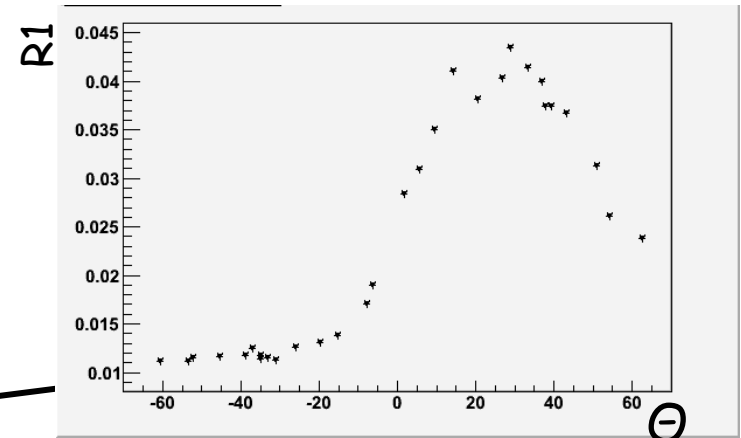
# Electrons

# Cerenkov contribution from OSC(1)

- Ratios computed from profiles

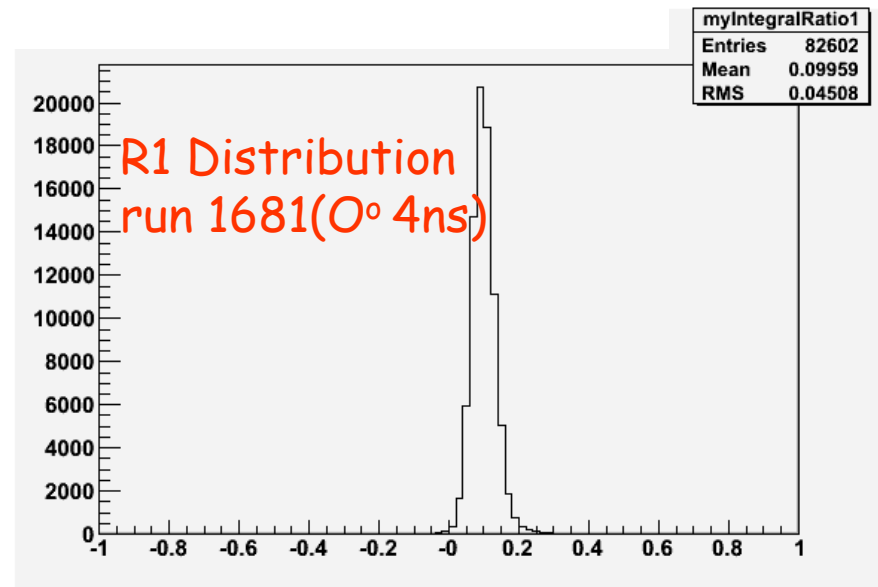
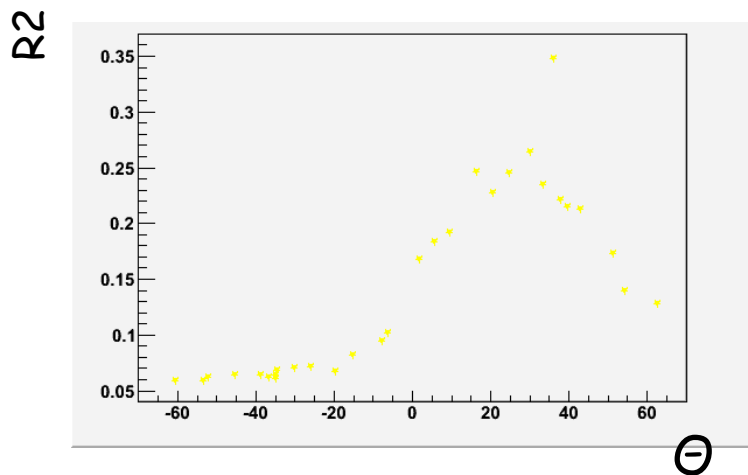
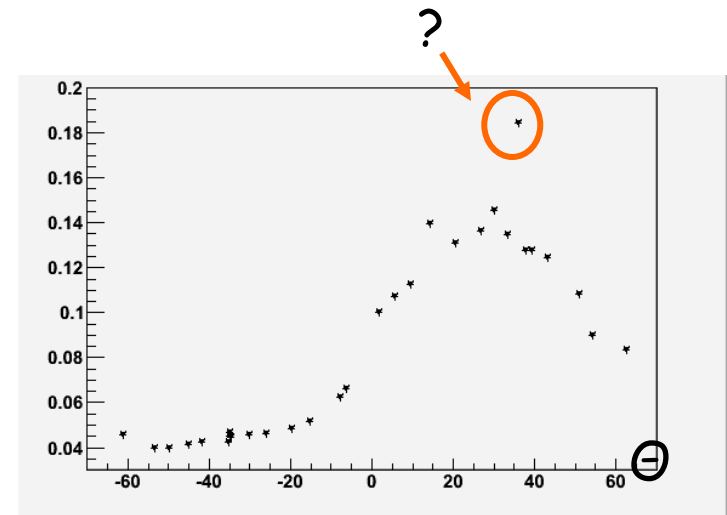
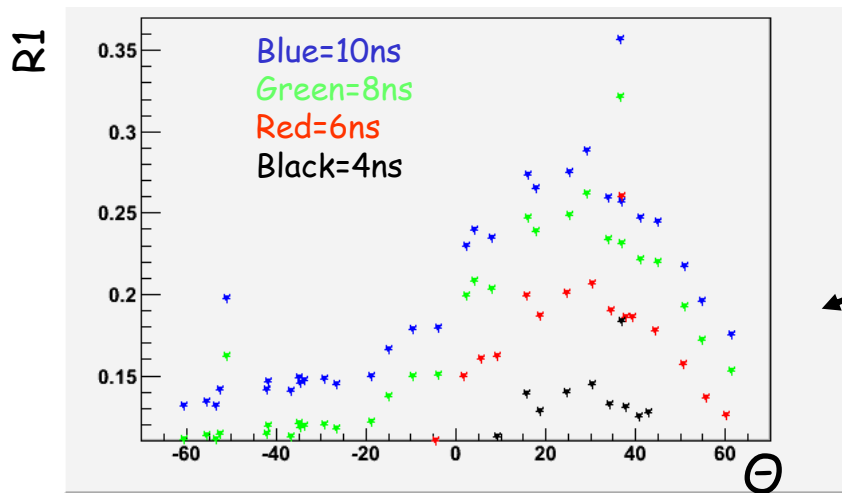


Blue=10ns  
Green=8ns  
Red=6ns  
Black=4ns



# Cerenkov contribution from OSC(2)

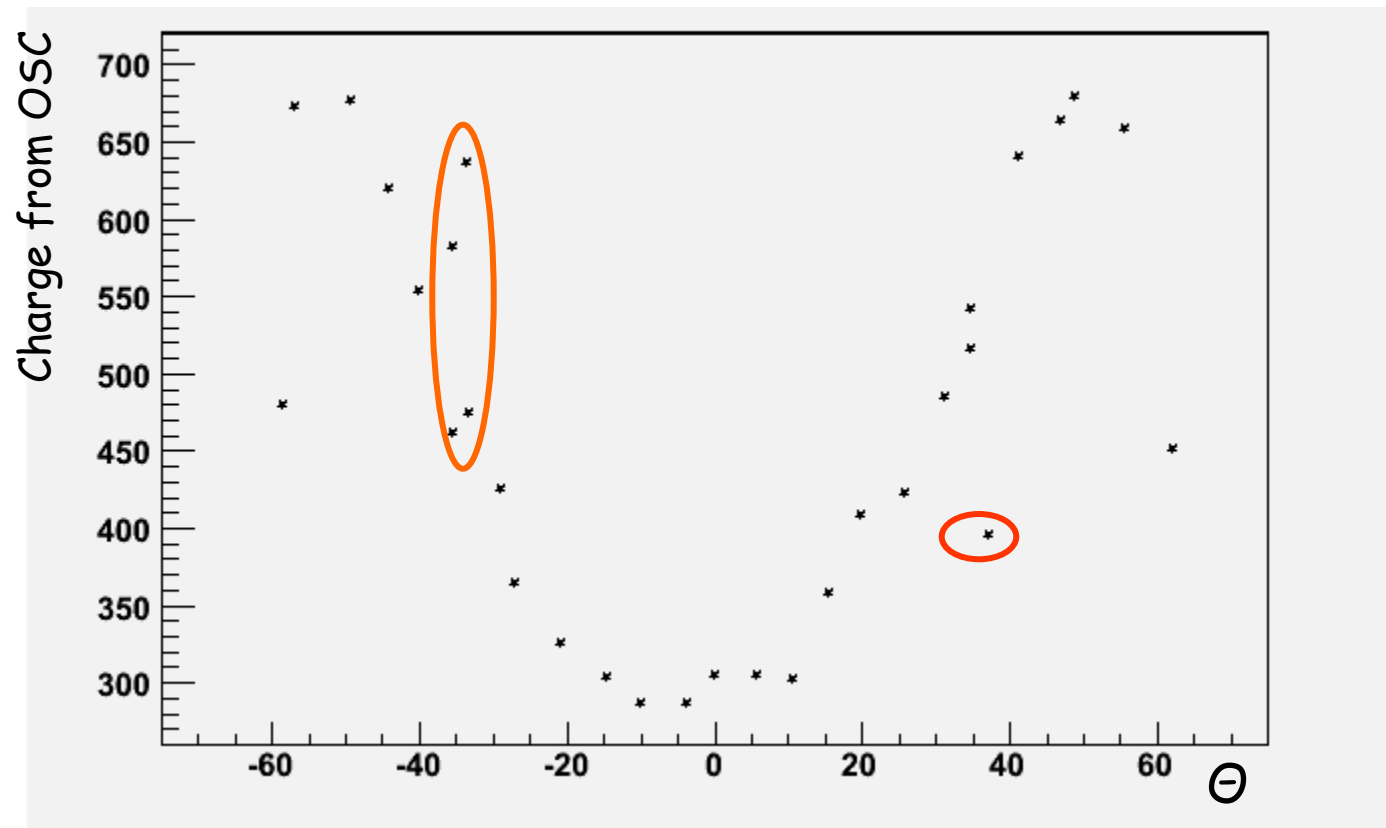
- Ratios computed event by event



R1

# Total integrated charge vs theta

Cerenkov side (OSC2)



## Summary and to do list

- Can see Cerenkov light in BGO UV side using charge integrated in different time windows
- need to optimize the algorithm
- some open questions

Other things to do:

Look to other scans

Compare with MC

.....