

# Lista di misure fatte

|           |         |                              |
|-----------|---------|------------------------------|
| CREMAT(2) | PLANARE | scan di guadagno e in soglia |
| CAEN      | PLANARE | scan di guadagno e in soglia |
| CREMAT(1) | GROOVED | scan di guadagno e in soglia |
| CREMAT(2) | GROOVED | scan di guadagno e in soglia |
| CAEN      | GROOVED | scan di guadagno e in soglia |
| CREMAT(2) | GROOVED | scan in soglia + TRIGGER TOP |

# Cosa c'è

Confronto CAEN e CREMAT planare

Confronto CAEN e CREMAT grooved

Confronto simulazione e misure di energia depositata

# Cosa manca

Misura del rate di acquisizione

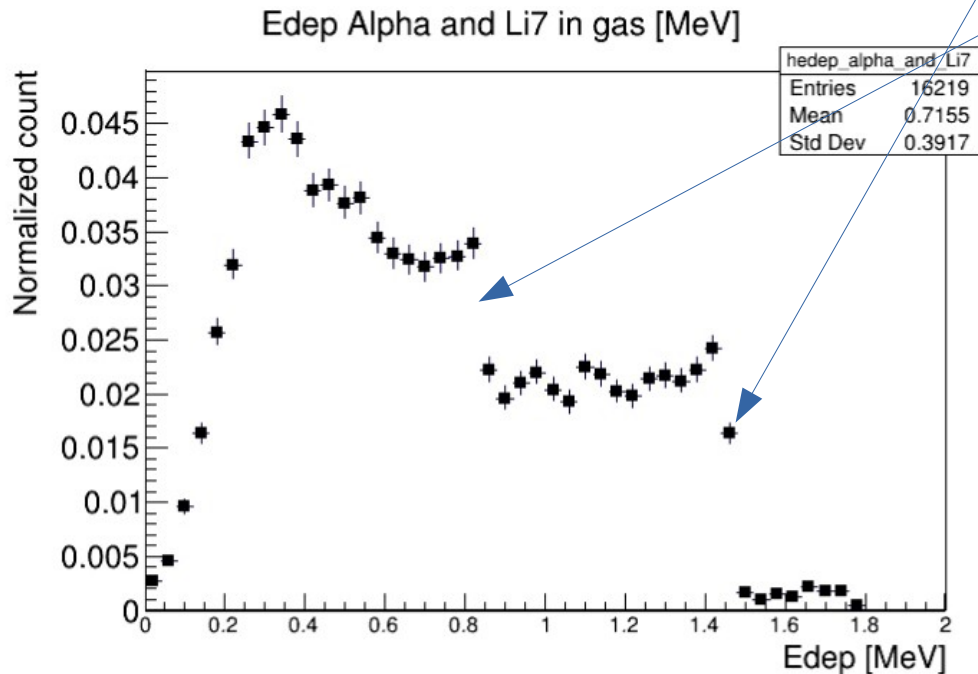
Analisi col GROOVED e 6kV/cm drift field

Confronto trigger HV side – NO HV side nel CREMAT(2)

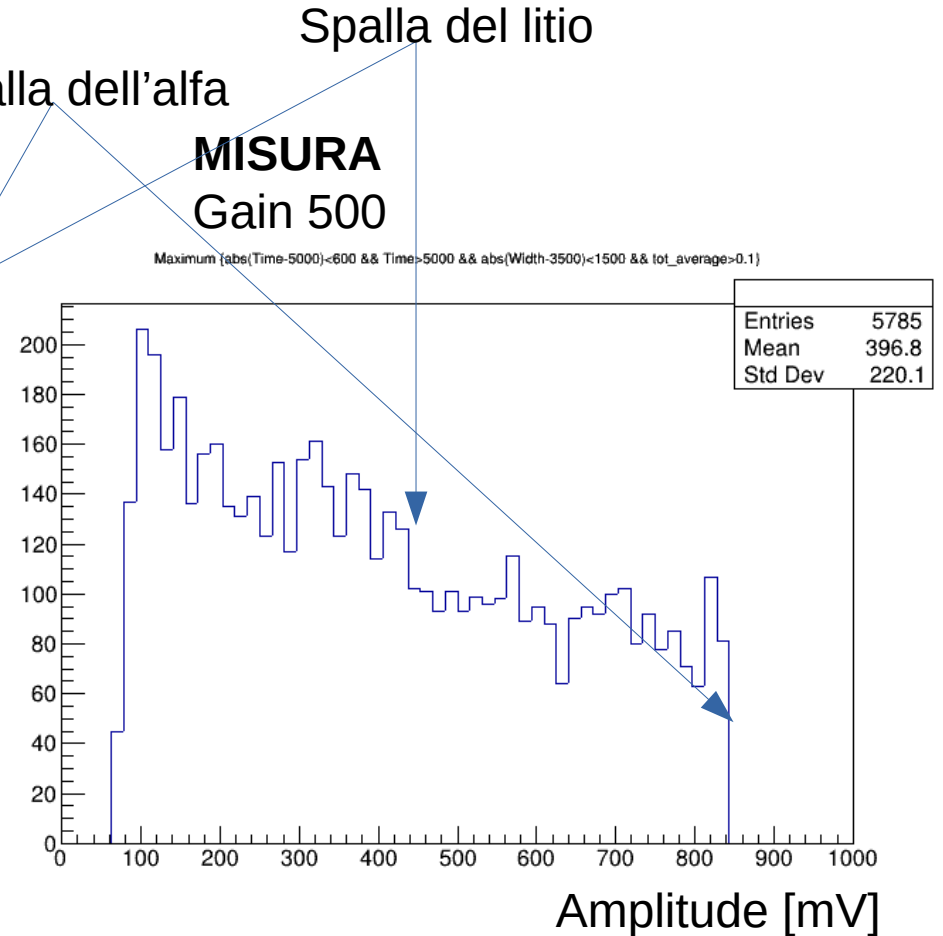
Analisi con doppio segnale da TOP e READOUT (coincidenza?)

# CATODO BORATO PLANARE da 2.5 $\mu\text{m}$ - CREMAT

**SIMULAZIONE**



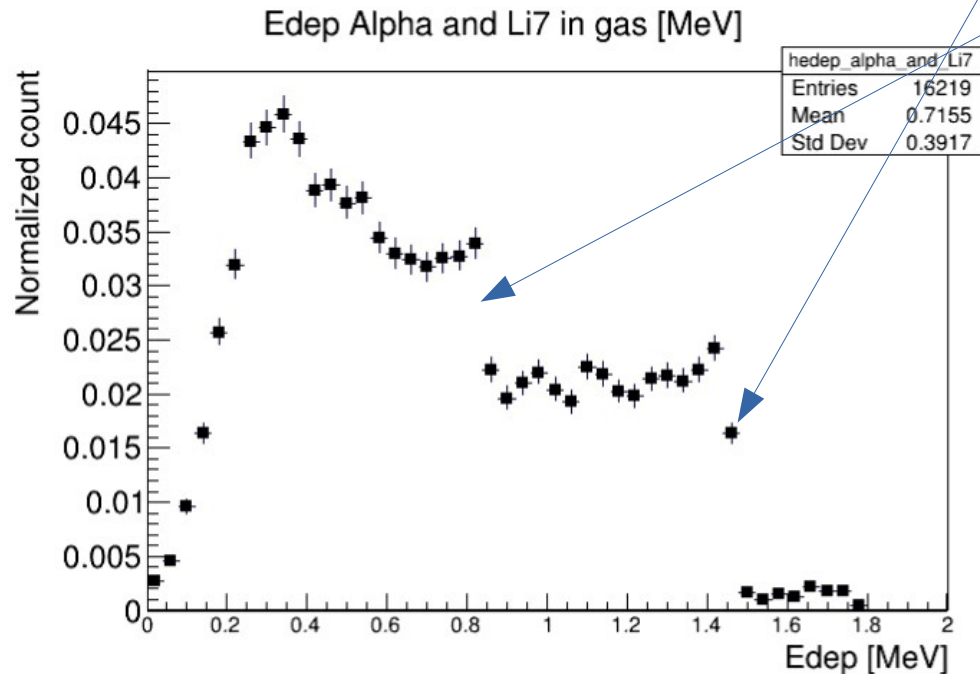
**MISURA**  
Gain 500



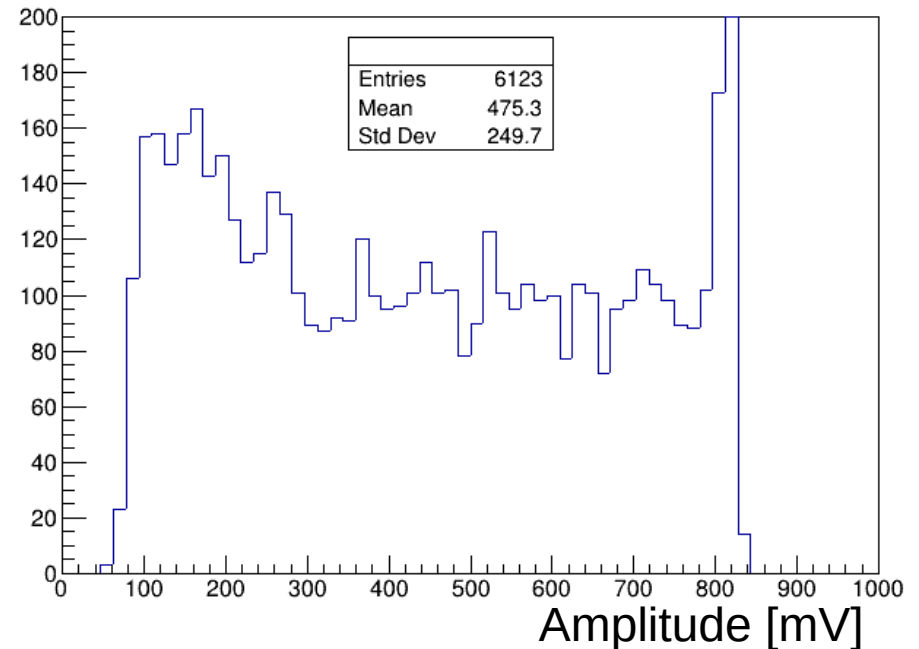
Conto a spanne: 1.4MeV~820mV  $\rightarrow$  50mV di thr sono 0.08 MeV  $\rightarrow$  vediamo tutto lo spettro

# CATODO BORATO PLANARE da 2.5 $\mu\text{m}$ - CREMAT

**SIMULAZIONE**



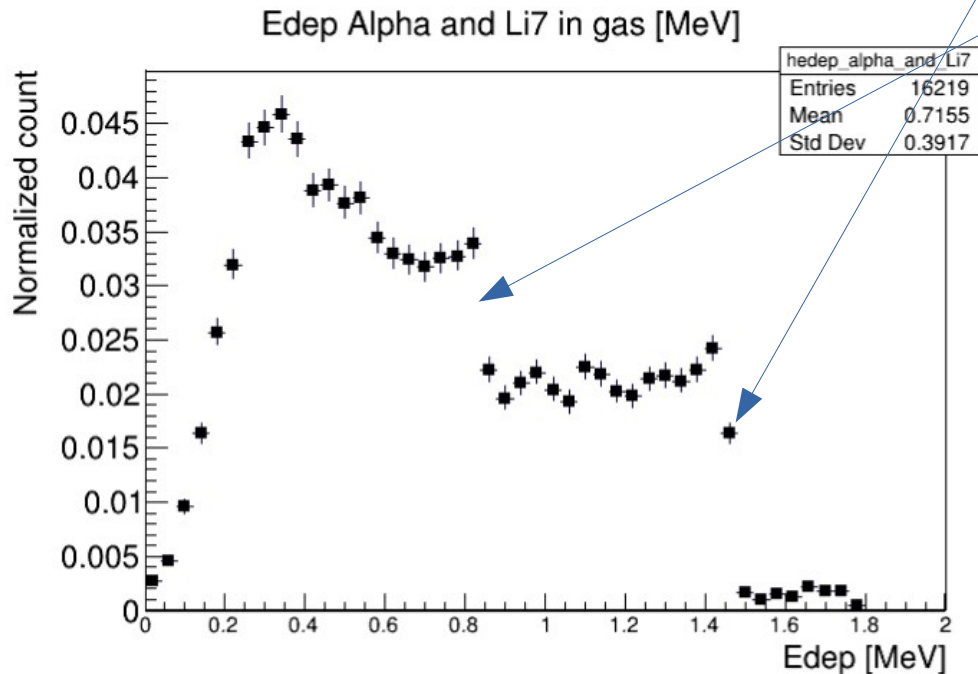
**MISURA**  
Gain 1000



Conto a spanne facendo quello prima(500) x2  $\rightarrow$  50mV di thr sono 0.04 MeV

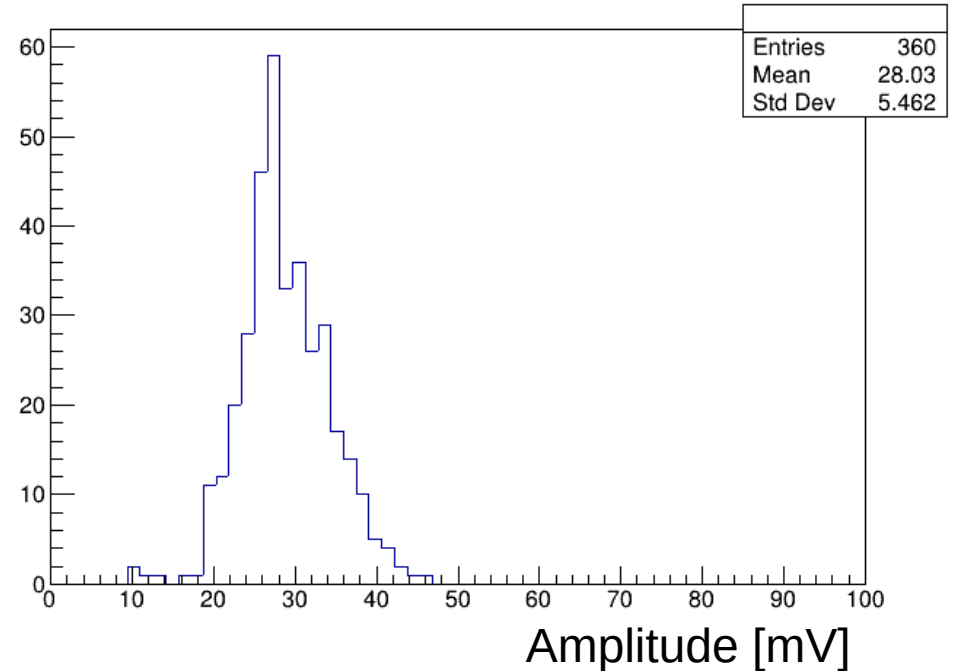
# CATODO BORATO PLANARE da 2.5 $\mu\text{m}$ - CAEN

**SIMULAZIONE**



**MISURA**  
Gain 500

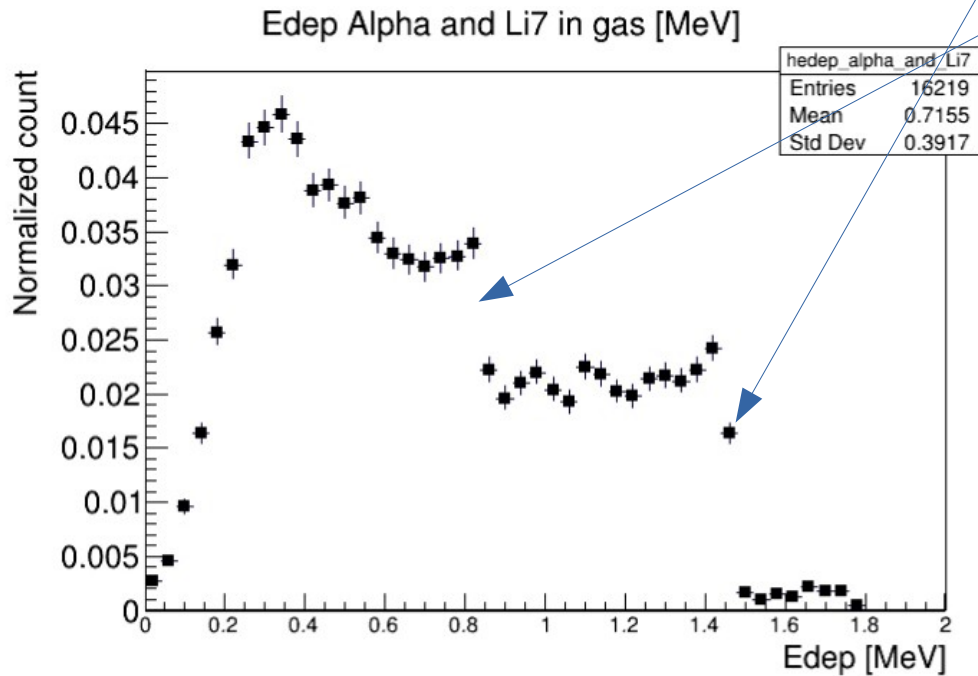
Maximum {abs(Time-5000)<100 && abs(Width-450)<250 && tot\_average>0.1}



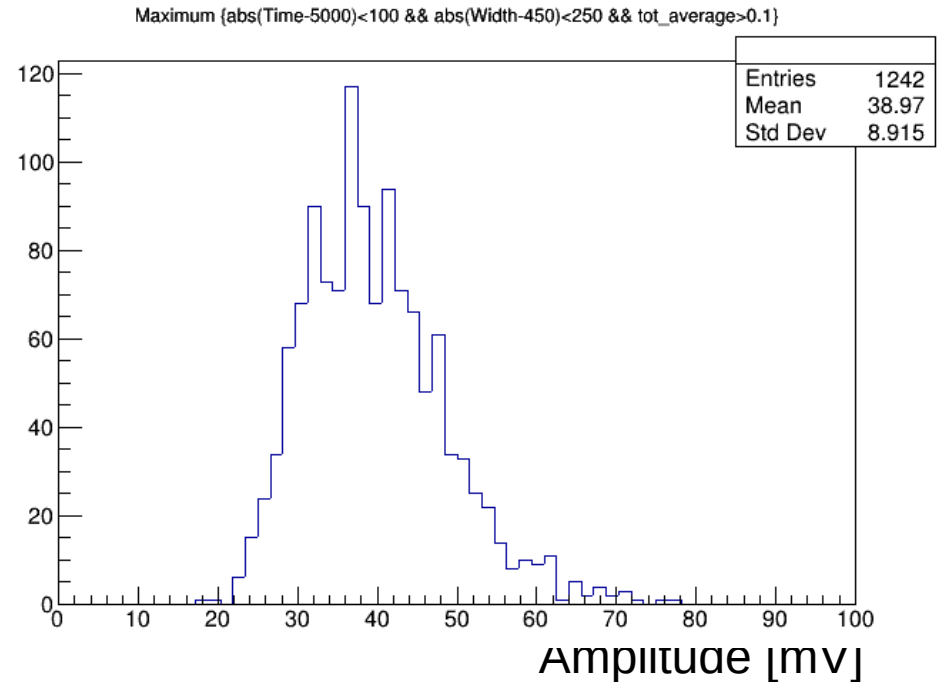
Distribuzione non chiara e molto compatta. Differente da quella "storica" acquisita sul TOP

# CATODO BORATO PLANARE da 2.5 $\mu\text{m}$ - CAEN

**SIMULAZIONE**



**MISURA**  
Gain 1000

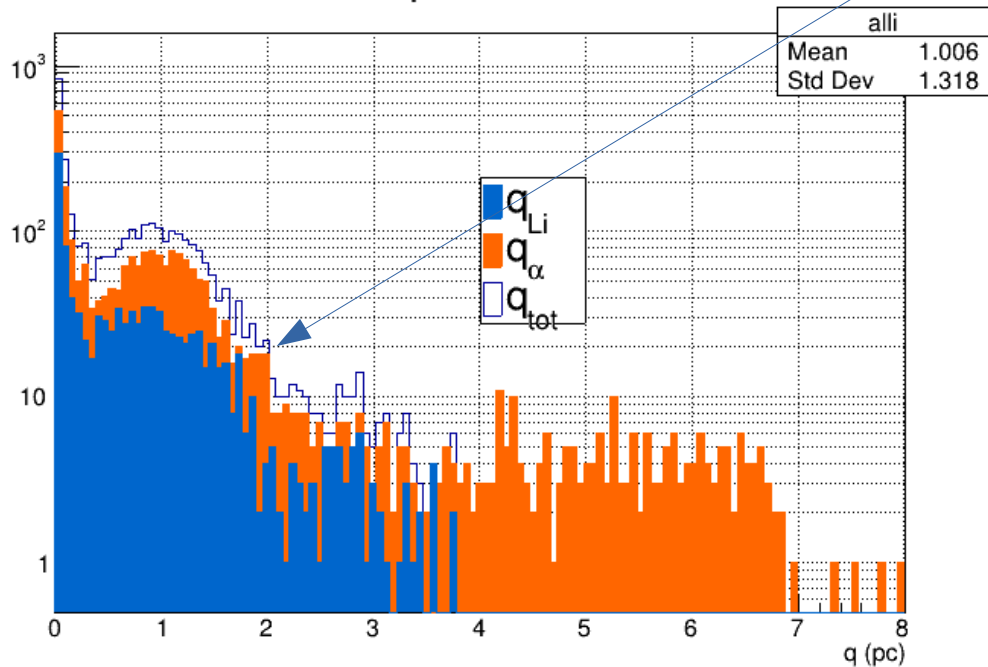


Distribuzione meno compatta

# CATODO BORATO GROOVED - CREMAT

**SIMULAZIONE**

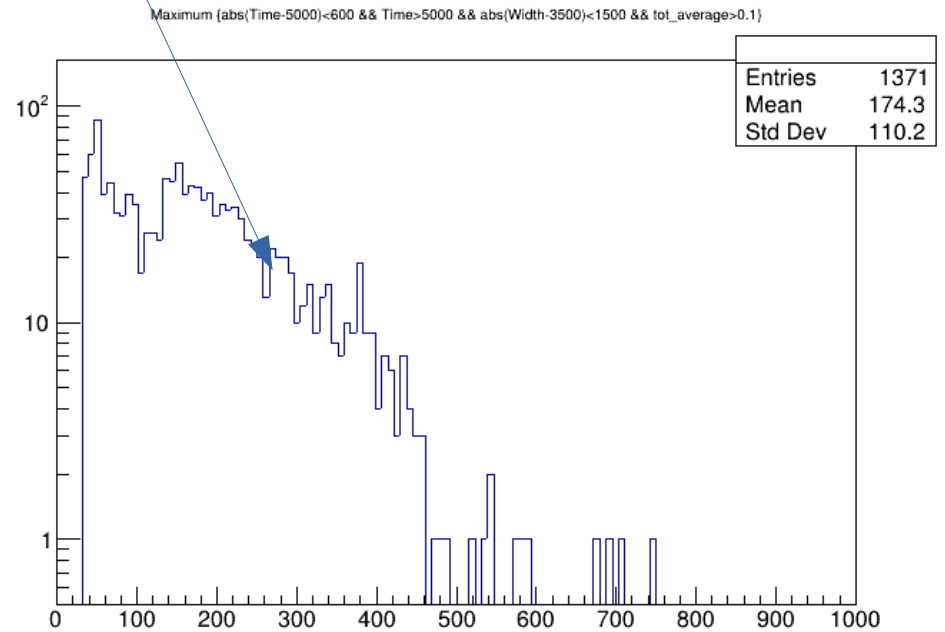
q 0.25 mm



Spalla del bulk a 1 pC

**MISURA**

Gain 500



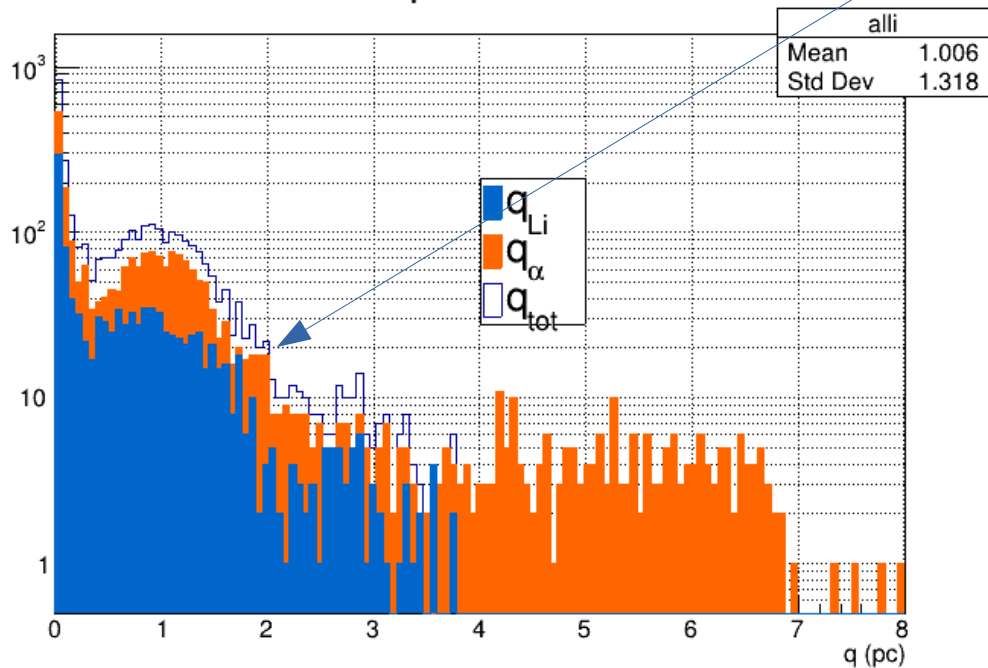
Conto a spanne: 2pC~250mV → 50mV di thr sono 0.4 pC → vediamo bene il picco a 1 pC ???



# CATODO BORATO GROOVED - CREMAT

**SIMULAZIONE**

q 0.25 mm

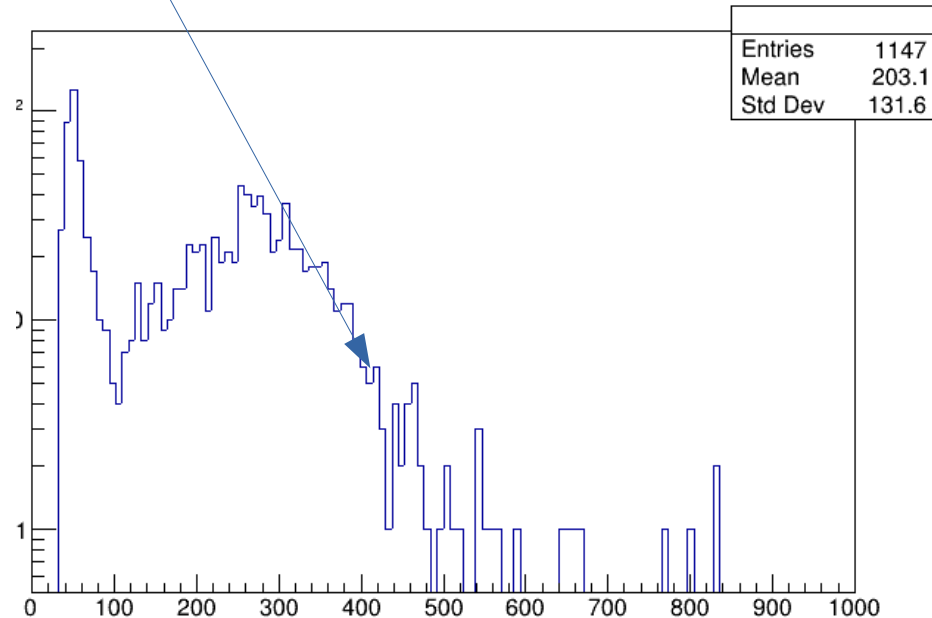


Spalla del bulk a 1 pC

**MISURA**

Gain 1000

Maximum (abs(Time-5000)<600 && Time>5000 && abs(Width-3500)<1500 && tot\_average>0.1)

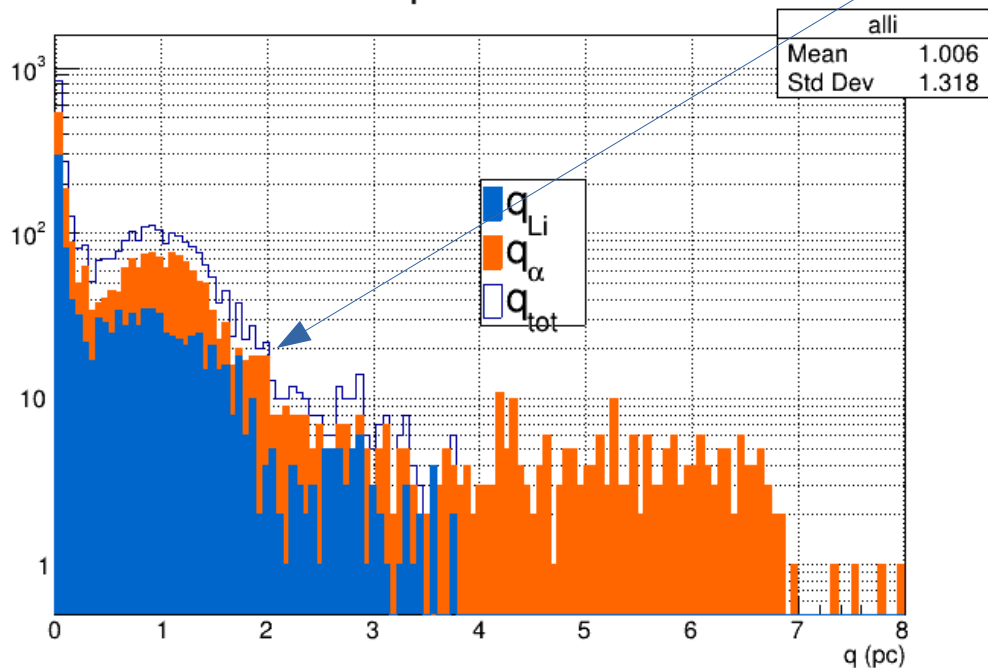


Conto a spanne: 2pC~450mV → 50mV di thr sono 0.2 pC → vediamo bene il picco sotto 1 pC ???

# CATODO BORATO GROOVED - CAEN

**SIMULAZIONE**

q 0.25 mm

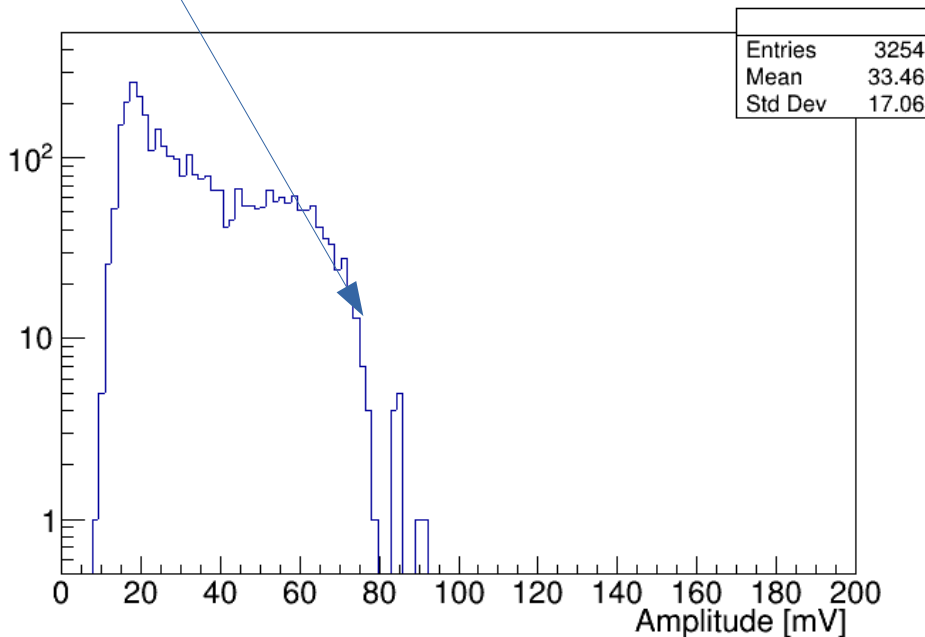


Spalla del bulk a 1 pC

**MISURA**

Gain 500

Maximum {abs(Time-5000)<200 && abs(Width-1000)<400 && tot\_average>0.1}

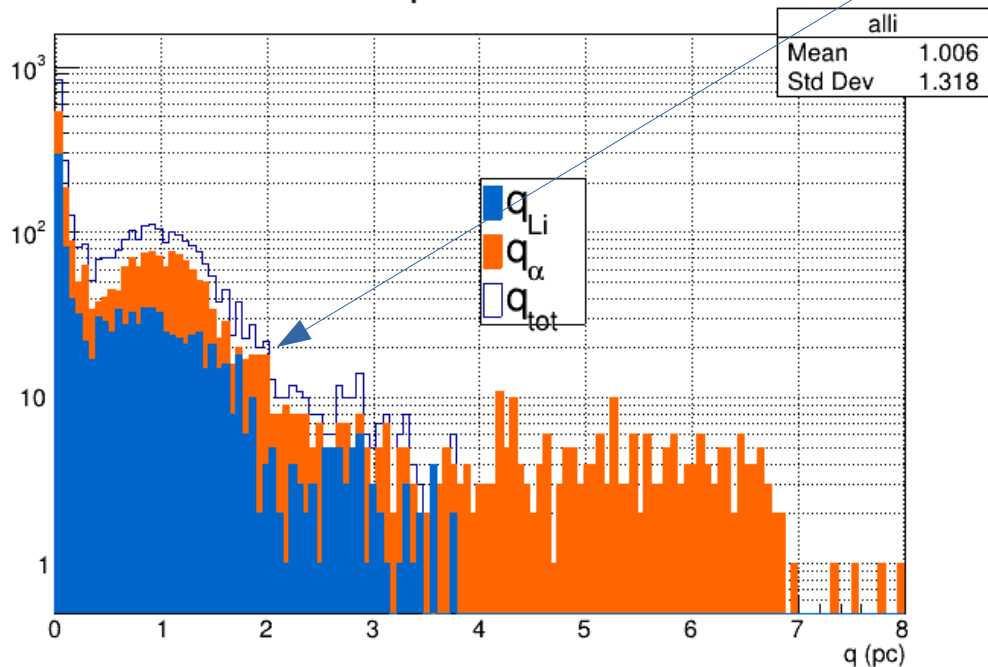


Conto a spanne: 1pC~40mV → 5mV di thr sono 0.12 pC → vediamo la fine il picco a bassa carica

# CATODO BORATO GROOVED - CAEN

## SIMULAZIONE

q 0.25 mm

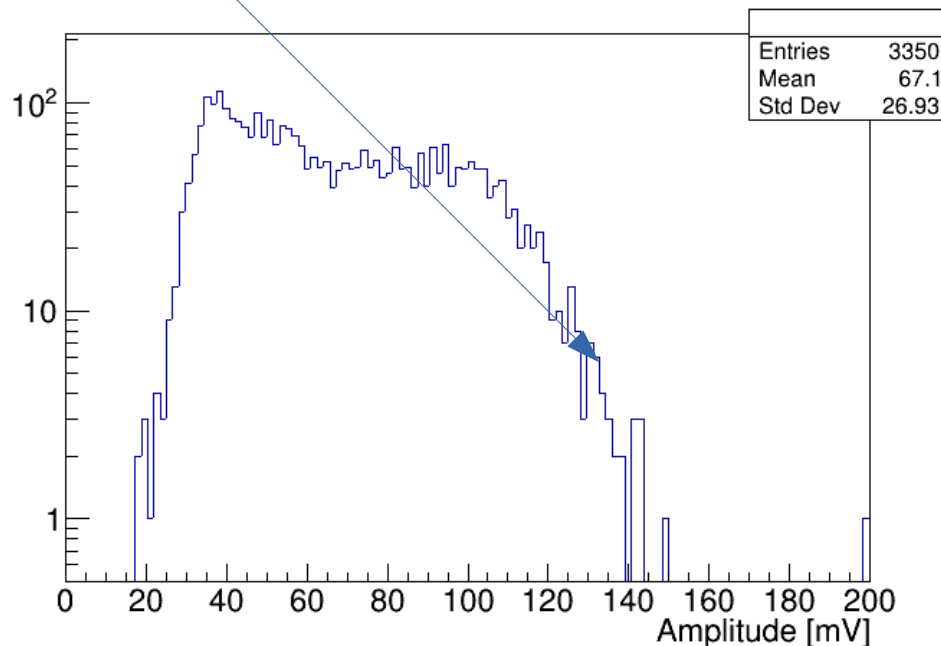


Spalla del bulk a 1 pC

## MISURA

Gain 1000

Maximum (abs(Time-5000)<200 && abs(Width-1000)<400 && tot\_average>0.1)

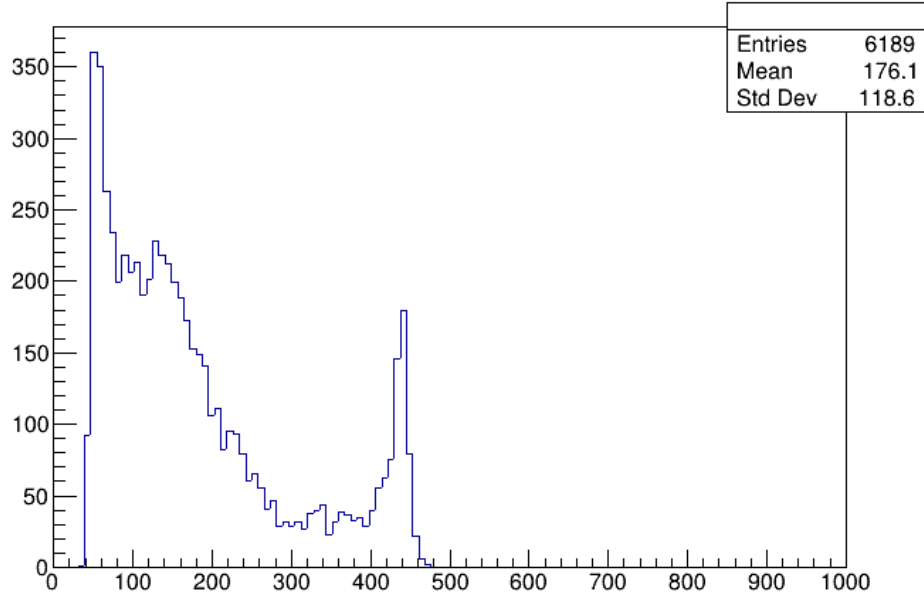


Conto a spanne: 1pC~70mV → 5mV di thr sono 0.08 pC → vediamo la fine il picco a bassa carica

# CATODO BORATO PLANARE da 2.5 $\mu\text{m}$ – CREMAT TRIGGER SUL TOP

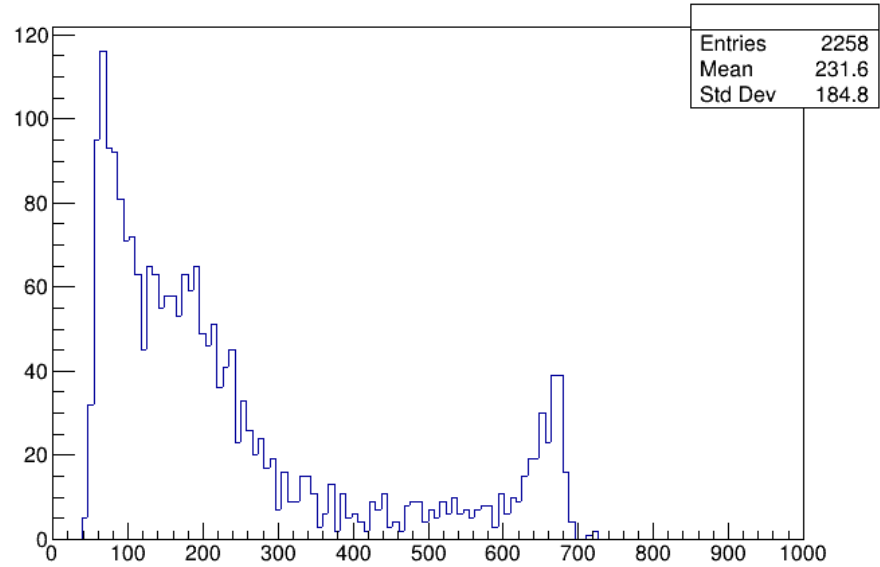
**MISURA**  
Gain 500

Maximum {abs(Time-5000)<1000 && Time>4900 && tot\_average>1}



**MISURA**  
Gain 1000

Maximum {abs(Time-5000)<1000 && Time>4900 && tot\_average>1}



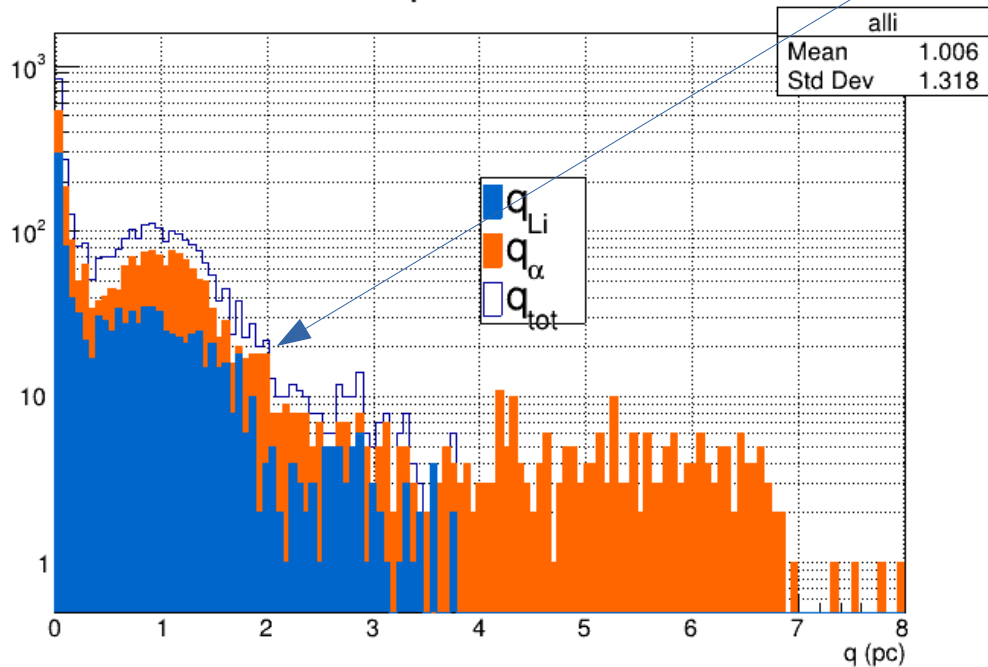
Amplitude [mV]

Backup

# CATODO BORATO GROOVED - CREMAT

**SIMULAZIONE**

q 0.25 mm

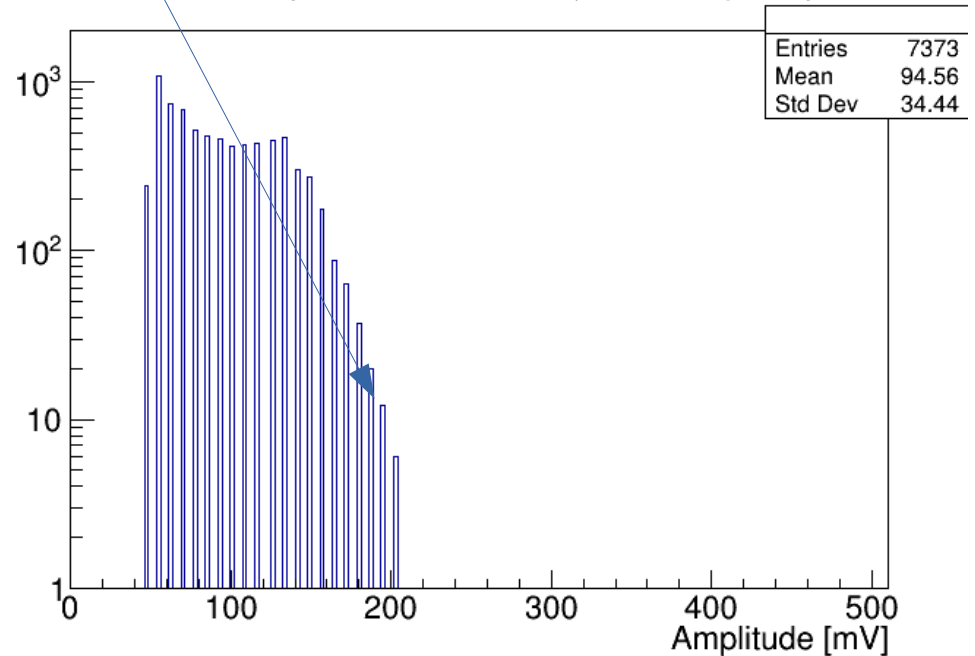


Spalla del bulk a 1 pC

**MISURA**

Gain 100

Maximum {Width>2000 && abs(Time-5000)<500}

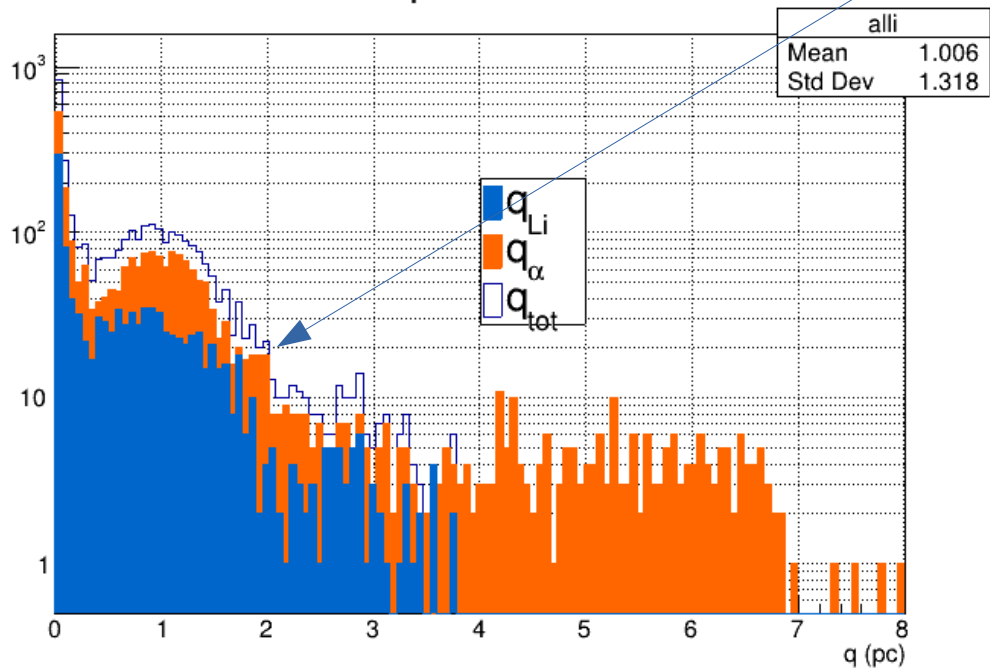


Conto a spanne: 1pC~100mV → 50mV di thr sono 0.5 pC → vediamo bene il picco a 1 pC ???

# CATODO BORATO GROOVED - CREMAT

## SIMULAZIONE

q 0.25 mm

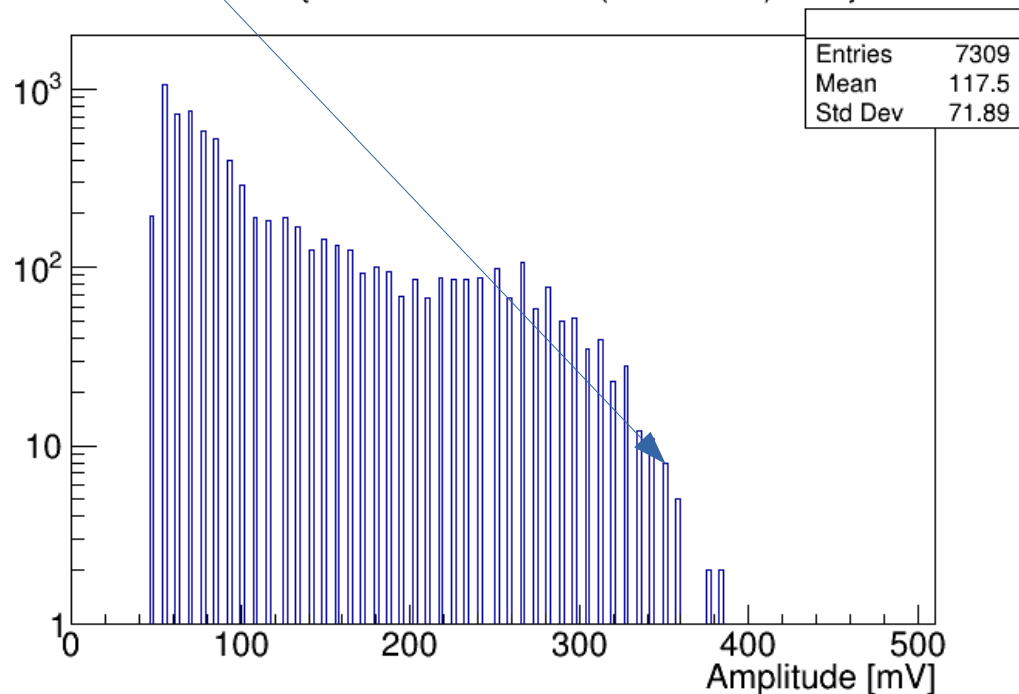


Spalla del bulk a 1 pC

## MISURA

Gain 200

Maximum {Width>2000 && abs(Time-5000)<500}

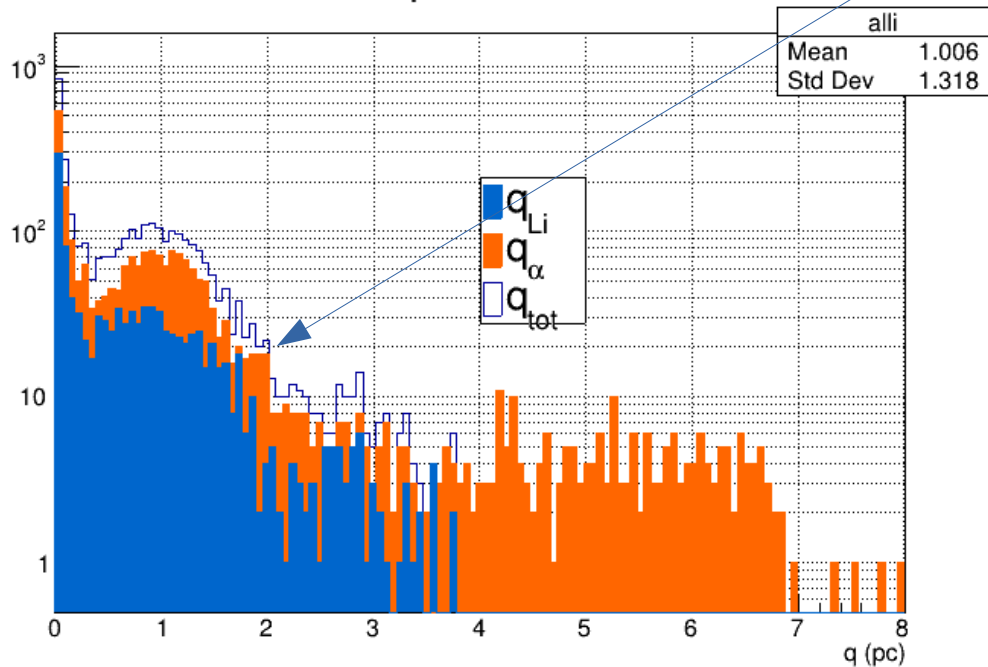


Conto a spanne: 1pC~175mV → 50mV di thr sono 0.35 pC → vediamo bene il picco a 1 pC ???

# CATODO BORATO GROOVED - CREMAT

## SIMULAZIONE

q 0.25 mm



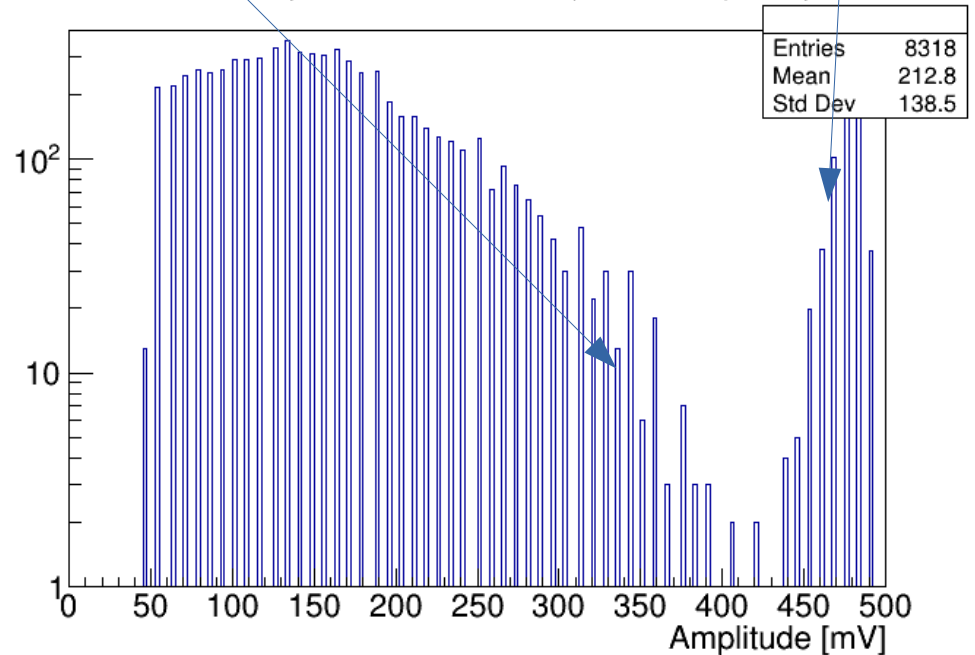
Spalla del bulk a 1 pC

## MISURA

Gain 500

saturation

Maximum {Width>2500 && abs(Time-5000)<500}



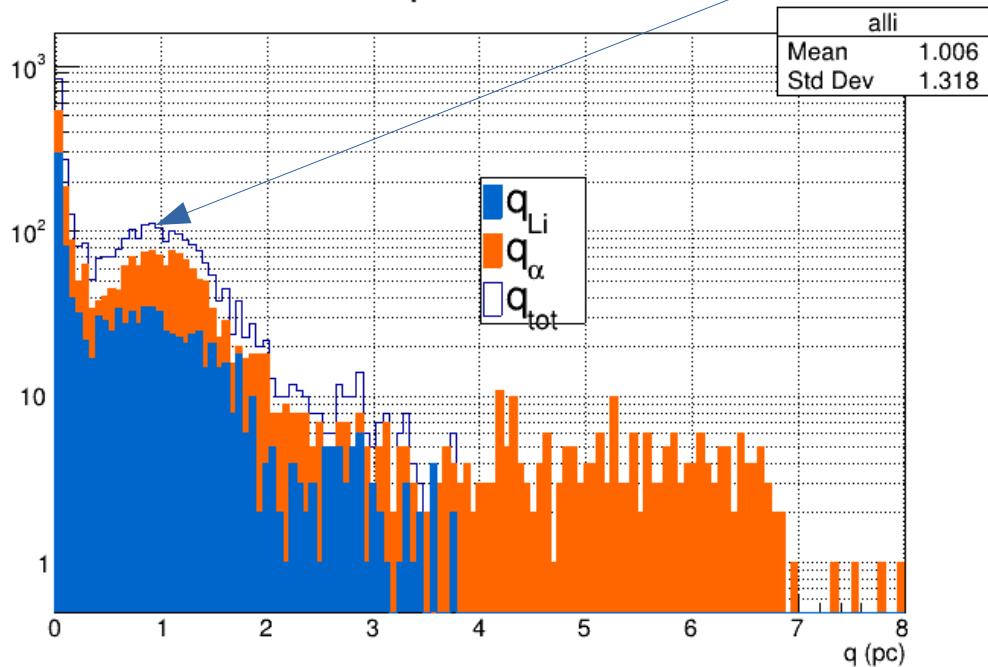
Conto a spanne: 1pC~175mV → 50mV di thr sono 0.28 pC → non vediamo meglio il picco a bassa carica



# CATODO BORATO GROOVED - CREMAT

## SIMULAZIONE

q 0.25 mm



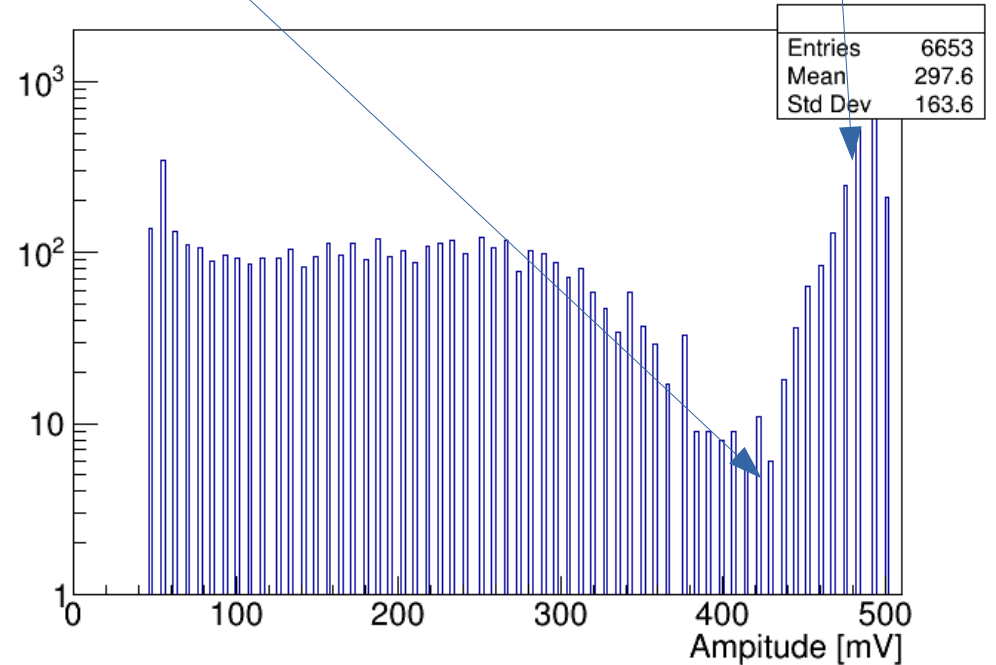
Picco del bulk a 1 pC

## MISURA

Gain 1000

Maximum {Width>2000 && abs(Time-5000)<500}

saturazione

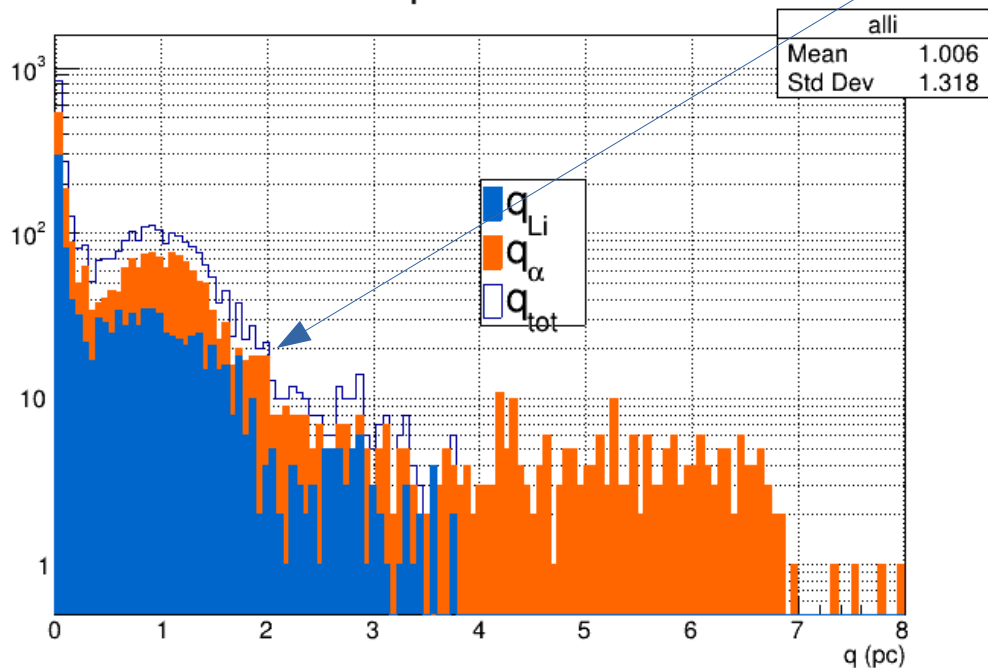


Conto a spanne: 1pC~220mV → 50mV di thr sono 0.25 pC → non vediamo meglio il picco a bassa carica

# CATODO BORATO GROOVED - CAEN

**SIMULAZIONE**

q 0.25 mm

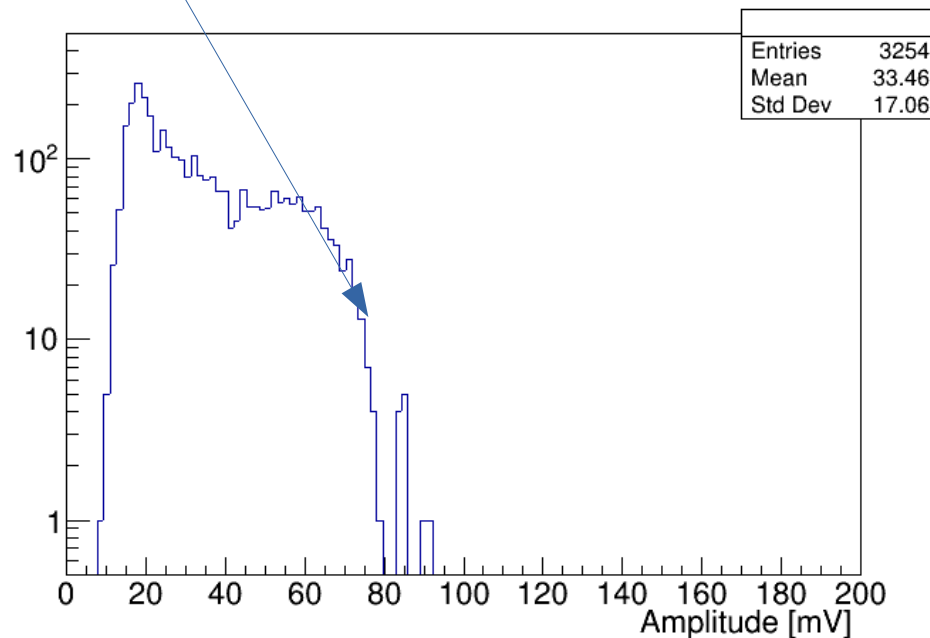


Spalla del bulk a 1 pC

**MISURA**

Gain 500

Maximum {abs(Time-5000)<200 && abs(Width-1000)<400 && tot\_average>0.1}

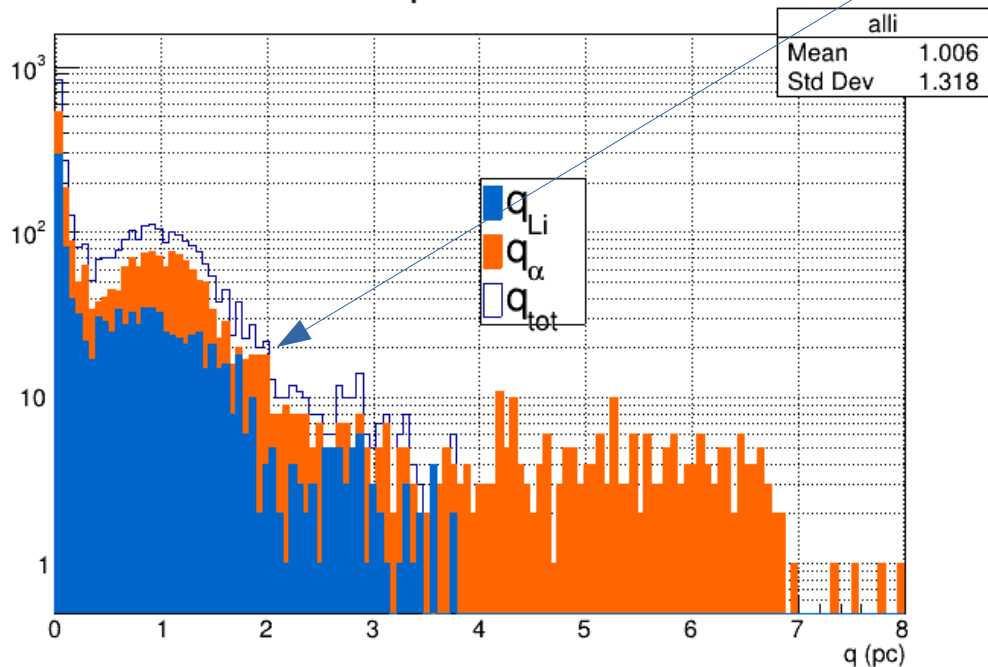


Conto a spanne: 1pC~40mV → 5mV di thr sono 0.12 pC → vediamo la fine il picco a bassa carica

# CATODO BORATO GROOVED - CAEN

**SIMULAZIONE**

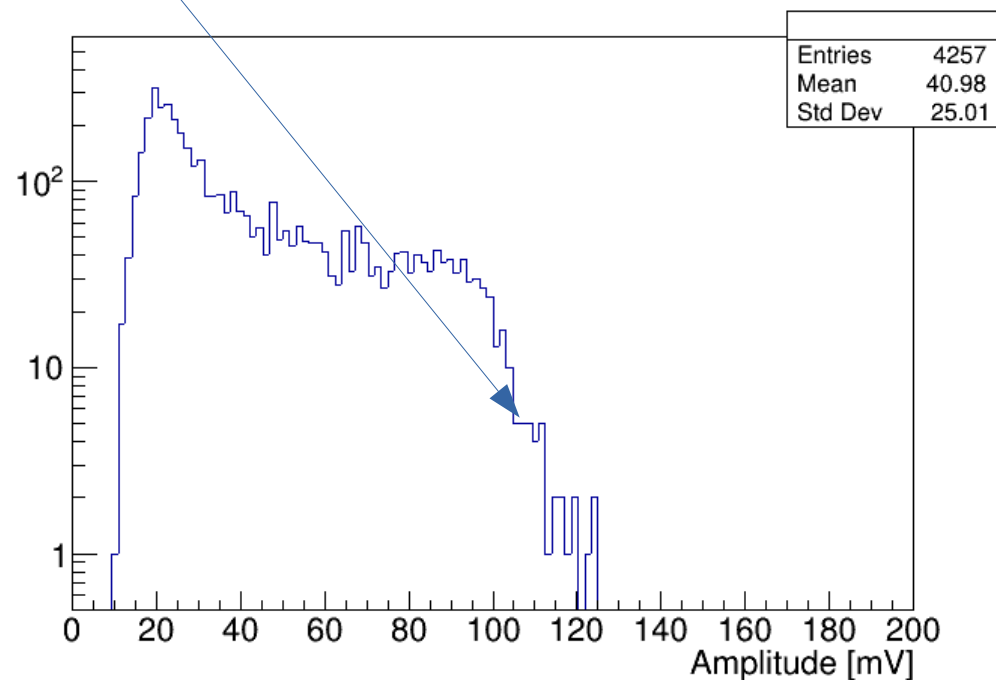
q 0.25 mm



Spalla del bulk a 1 pC

**MISURA**

Gain 700

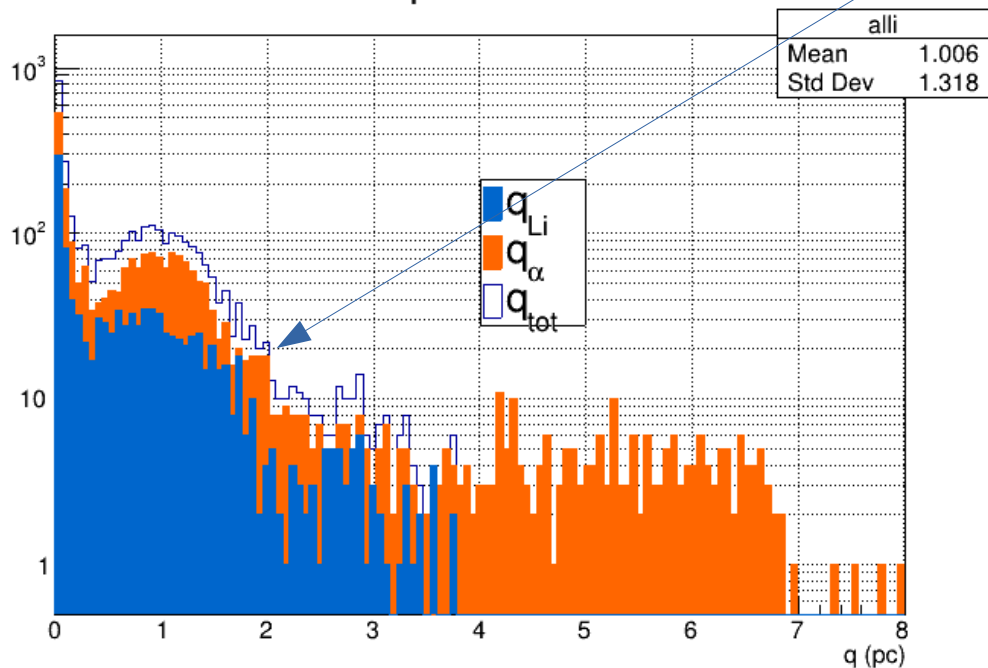


Conto a spanne: 1pC~55mV → 5mV di thr sono 0.1 pC → vediamo la fine il picco a bassa carica

# CATODO BORATO GROOVED - CAEN

## SIMULAZIONE

q 0.25 mm

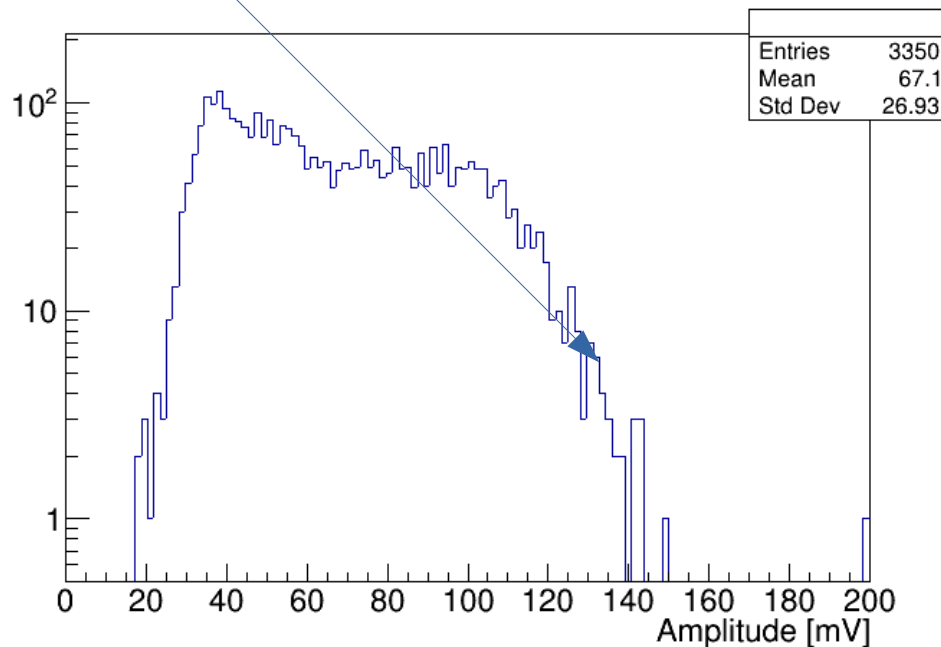


Spalla del bulk a 1 pC

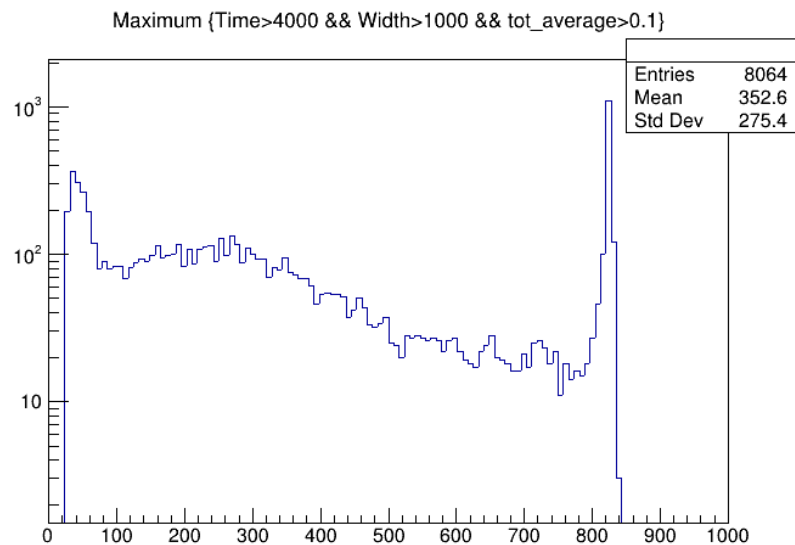
## MISURA

Gain 1000

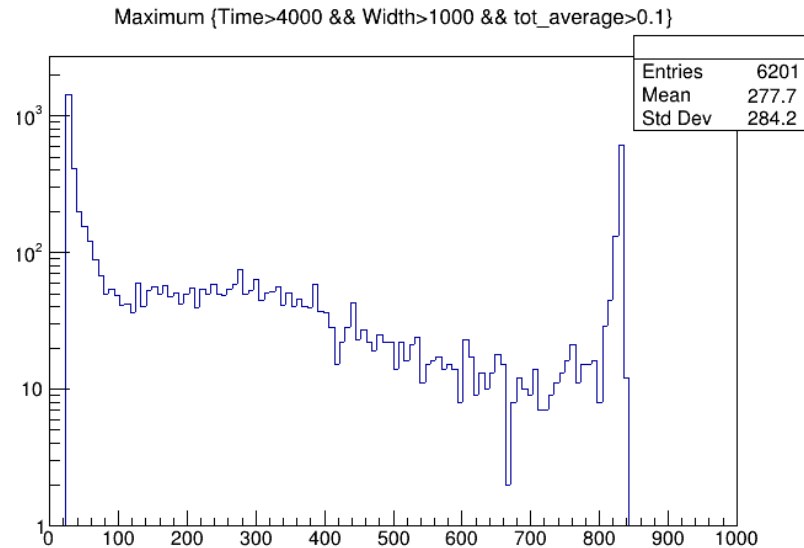
Maximum (abs(Time-5000)<200 && abs(Width-1000)<400 && tot\_average>0.1)



Conto a spanne: 1pC~70mV → 5mV di thr sono 0.08 pC → vediamo la fine il picco a bassa carica



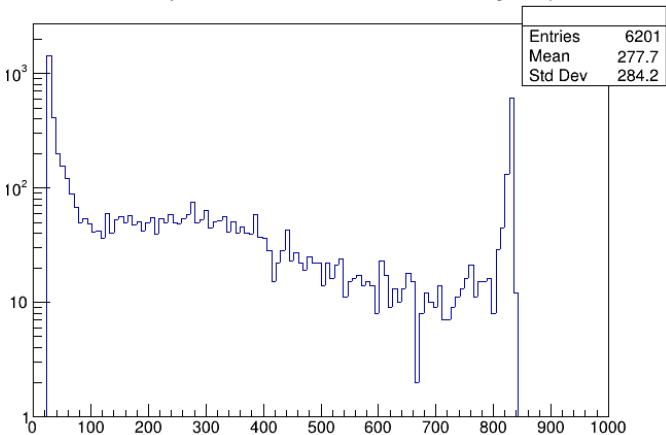
**Trigger HV side**



**Trigger NO HV side**

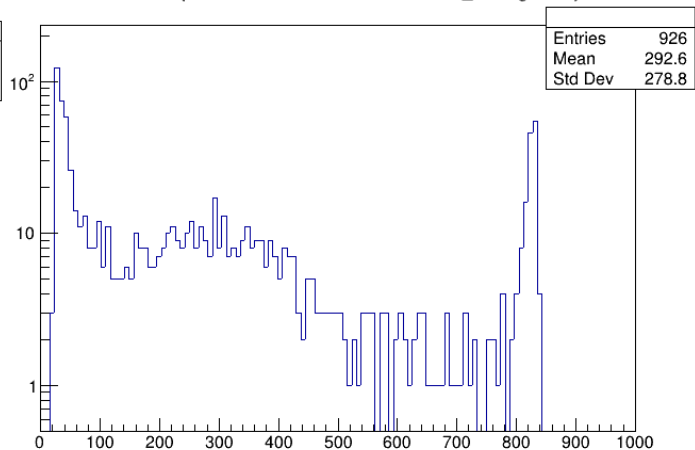
# Trigger NO HV side

Maximum {Time>4000 && Width>1000 && tot\_average>0.1}



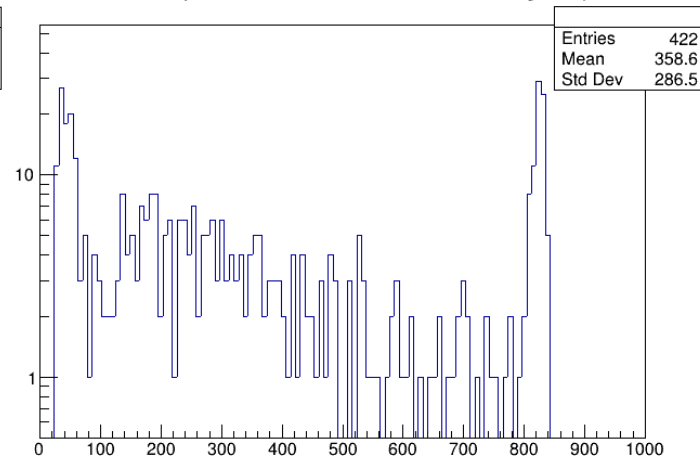
**Thr 25 mV**

Maximum {Time>4000 && Width>1000 && tot\_average>0.1}



**Thr 20 mV**

Maximum {Time>4000 && Width>1000 && tot\_average>0.1}



**Thr 15 mV**