

Normalization

BCM Class : Replay

```
THaPhysicsModule* BCM = new TriBCM("RightBCM", "Beam Current Monitors" ,  
"Right" , "", 0);  
gHaPhysics->Add(BCM);
```

```
THaPhysicsModule* BCMev=new TriBCM("RightBCMev","Beam Current Monitors" ,  
"Right","ev",0);  
gHaPhysics->Add(BCMev);
```

BCM Class:

```
charge[i] = bcms_diff[i]*gain[i] + off[i]*time_sec;
```

Bcms_diff is the difference in the bcms for two scaler events.

Time_sec is the amount of time in seconds between two scaler events.

```
current[i] =bcms_R[i]*gain[i] + off[i];
```

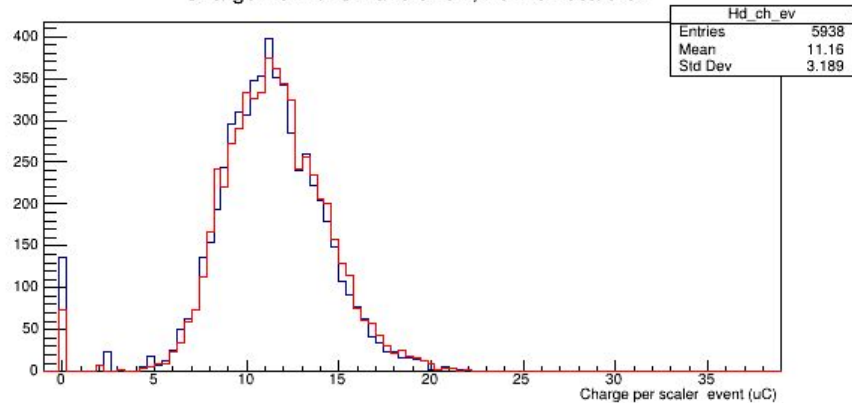
bcms_R is the bcm rate.

Gain and offset from the Database!

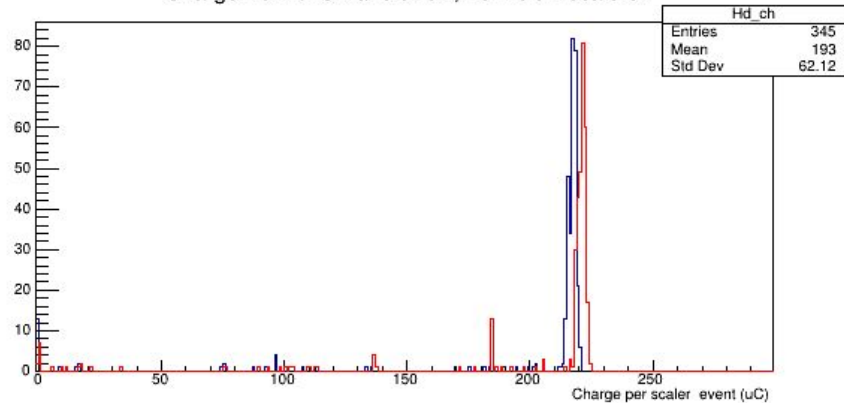
Variable -> isrenewed (flag to isolate a scalar event for the TTree)

BCM class Unew in red

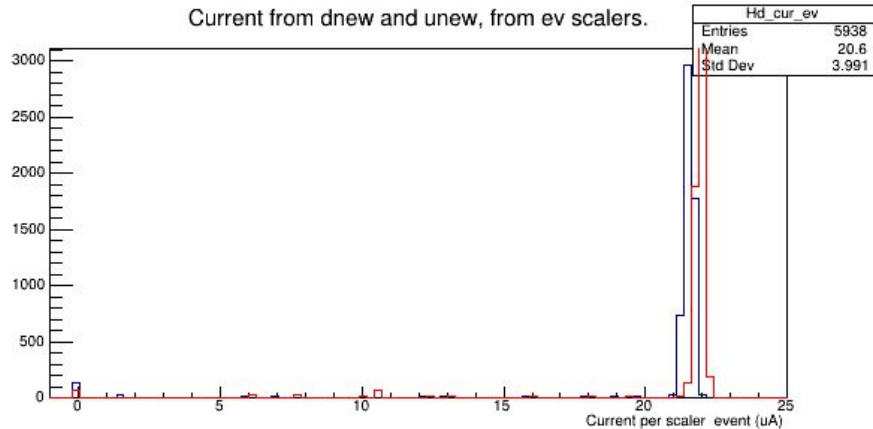
Charge from dnew and unew, from ev scalars.



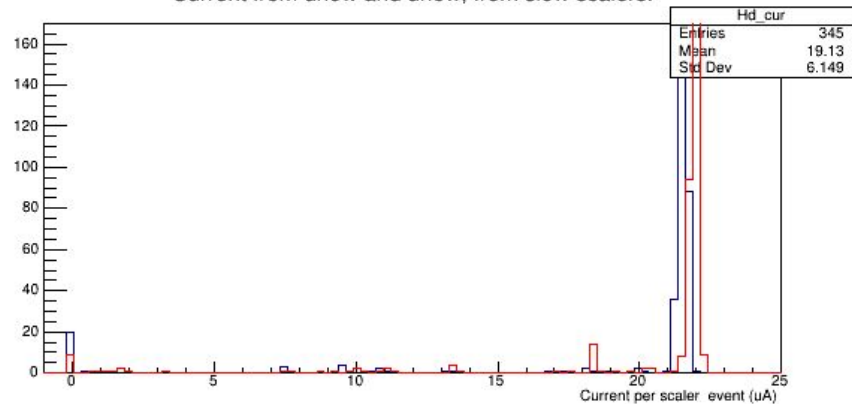
Charge from dnew and unew, from slow scalars.



Current from dnew and unew, from ev scalars.

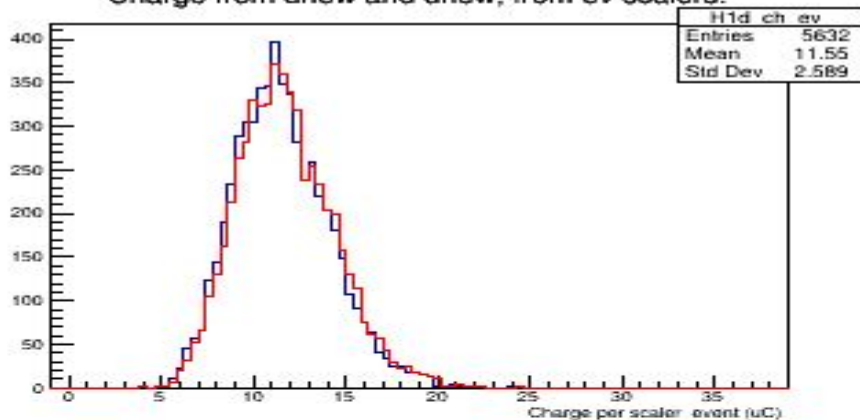


Current from dnew and unew, from slow scalars.

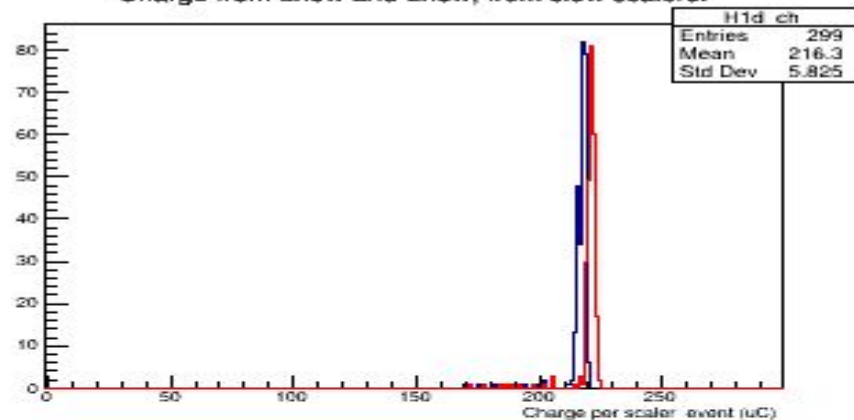


With Cut in Current at 15.0 μA - Unew in red

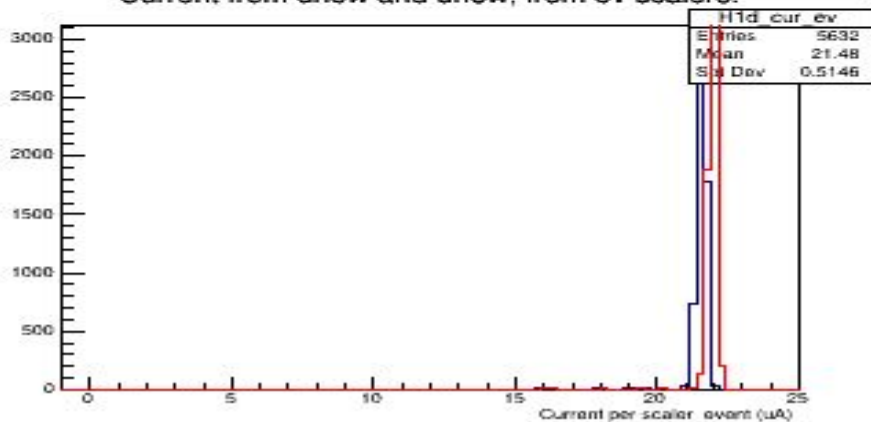
Charge from dnew and unew, from ev scalers.



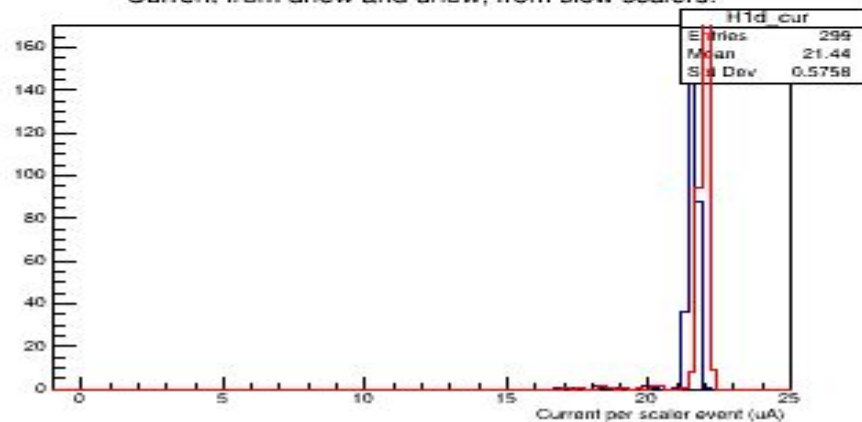
Charge from dnew and unew, from slow scalers.



Current from dnew and unew, from ev scalers.



Current from dnew and unew, from slow scalers.



Normalization : results uAs

Total Charge Calculation:

Loop through Event by Ttree event:

Only count if (isrenewed==1 && current_dnew > 15.0uAs)

| | dnew | unew |
|------|---------|---------|
| Fast | 65112.5 | 66214.1 |
| Slow | 64846.5 | 68160.2 |

Issues

The calculated current and charge per event is on a scalar basis and injected into a normal event.

The value for the current is assigned to trailing events and not the events between the scalar events used to make the calculation.