Subject: Re: prespec data analysis package
Posted by miree on Thu, 10 Jul 2014 16:49:50 GMT
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Hi Tayfun,

I think you got an old version of the AgataTimeCrate configuration.
Try to put only one time crate for AGATA like this:

```
crate AgataTimeCrate
   procid 86
   triggers    all
   module      mhtdc     LYCCA.v1290TMM  triggers 2 3 5 6 7 8 9 10
   module      scaler    LYCCA.v830      triggers 1 12 13
end
```

This contains a scaler and a multihit TDC that are read out on different triggers.

Assignments like "particle_gamma_time[36] <- Agata/ParticleGammaTime.output[0]" describe the mapping from the multihit TDC channel to the crystal-ID that provides the signals for the TDC channel. In this example, AGATA crystal 36 (=12A) was plugged (via a CFD) into channel 0 of the multihit TDC. How to find this assignment is described below.
The reason why you have 17 only, is that you based your analysis on the files for the performance commissioning. There were only 17 crystals in the setup. You need to find the two missing assignments (and verify the 17 assignments that are already there).

Another method to get the particle-gamma time is by using the following quantities:
a) time information inside the PSA frames (T0 and/or T1): This gives the difference between the GST timestamp of that PSA frame and the rising edge of the core signal.
b) the time difference between the Sc41 signal and the AGAVA accepted signal - both measured in one multihit TDC in the user crate.
c) the difference between the GTS timestamp of the MBS event and the GTS timestamp of the PSA frame.

The AgataAdapter processor computes from these quantities the particle-gamma time difference and provides it in the output arrays "core_pgtime_high" (using the T0 field in the PSA frame) and "core_pgtime_low" (using the T1 field in the PSA frame).
In order to do this, it needs the GTS timestamp from the AGAVA module

```
   timestamp_agava_high24    <-   TrloCrate.agava[1]
   timestamp_agava_low24     <-   TrloCrate.agava[2]
```

and the time difference (b), coming from a multihit TDC

```
   dt_sc41_agava_acc         <-   Agata/Sc41Time.output[0]
```

The core_pgtime_high and core_pgtime_low arrays contain the information for all crystals. You can use this information to find which core signal was plugged into which multihit TDC channel by plotting all combinations of crystal-ID and multihit-TDC channel. For example with the following loop:

```
for $ch in [0:27]
```

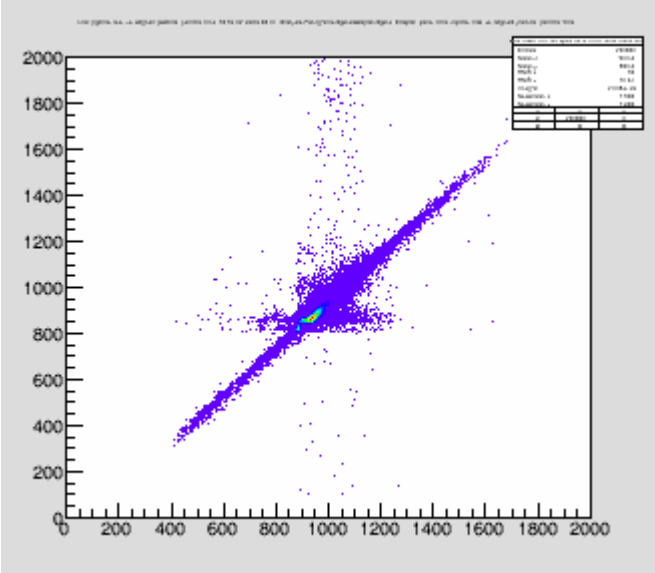
```
    for $id in [0:179]
      processor Agata/Lut_Finder_$ch_$id UTILS.DoubleArray
        x[0] <- Agata/ParticleGammaTime.output[$ch]
        y[0] <- Agata/Adapter.core_pgtime_low[$id]
        display x:y in Lut_Finder_$ch
      end
    end
end
```

Now, look for the plots that show the correct correlation between both quantities. If the combination of crystal-ID/multihit-channel is correct, you should get a plot similar to the one "TimeTime_good.png" (attached). For all wrong combination, the plot looks similar to "TimeTime_bad1.png".

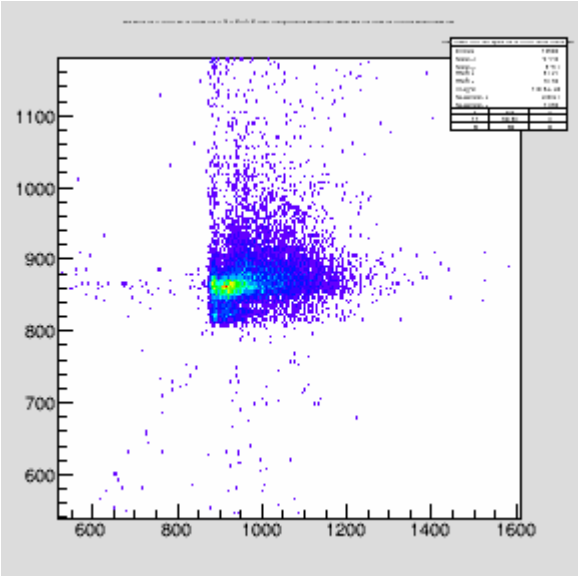
Best regards,
Michael

File Attachments

1) TimeTime_good.png, downloaded 673 times



2) TimeTime_bad1.png, downloaded 724 times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