Subject: Re: prespec git updates
Posted by miree on Fri, 12 Dec 2014 12:39:39 GMT
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Hello,

A severe problem in the so called "Core Tracking" algorithm was discovered by Liliana (the name of the processor is "GammaTrackingCore" in the AGATA plugin) .
First, the algorithm was throwing out all events with only one PSA hit the full array. That reduces the statistics.
Second, it produced one additional "nonsense gamma". The second point increases the gamma multiplicity by one, but does not affect the gamma spectra.

I have rewritten the algorithm and copied the old one to "GammaTrackingCoreWithBug", in case you want to quantify the losses you had in your spectra. The changes are already pushed to the git repository.

I did the comparison for one of the 80Kr Coulex runs (everything else in the analysis is identical).
The counts in the 80Kr peak (at 616 keV):
old: 569.95 +- 45.1105
new: 688.684 +- 48.2208

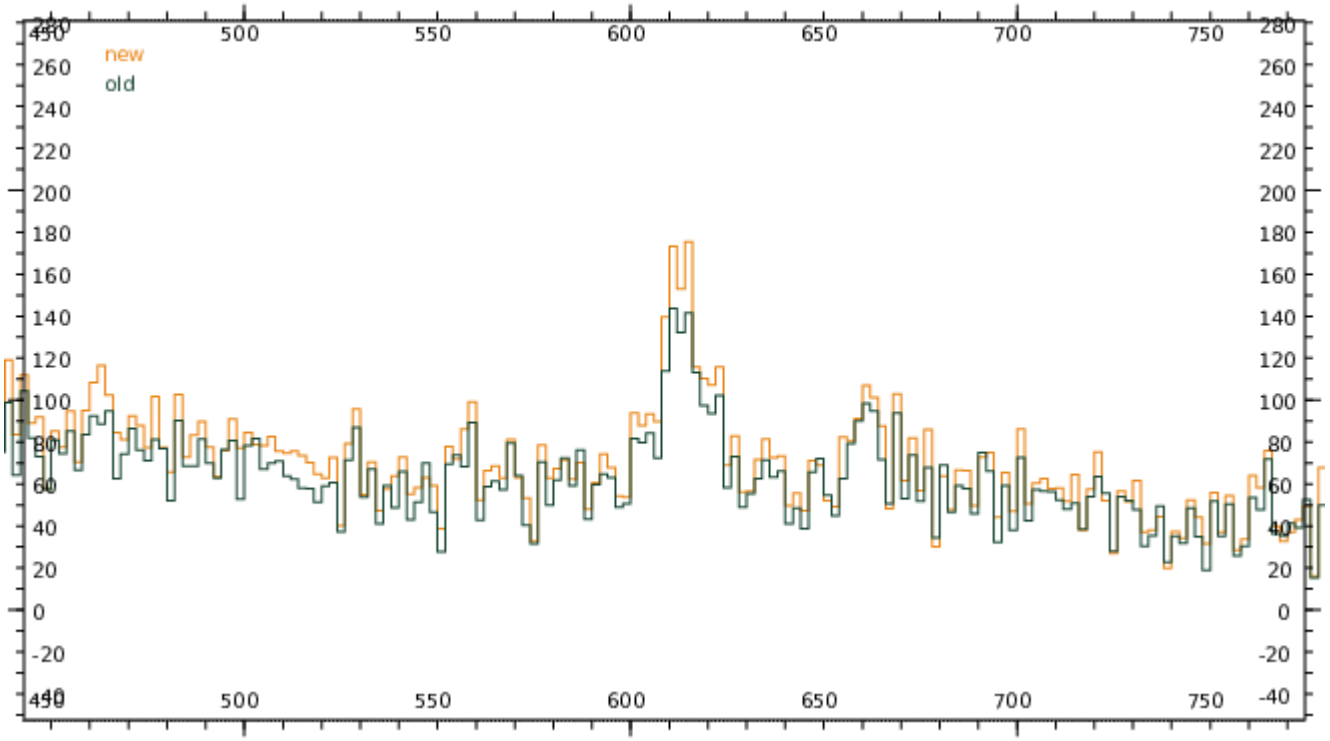
(the histograms are background subtracted. That is why some of the bins may contain fewer counts after correcting the mistake.)

So 20% of the counts were lost because of that mistake.
I don't know if under different conditions (higher/lower rate, heavier particles, etc.) the loss is bigger or smaller.

I'm sorry for that mistake!
Michael

File Attachments

1) old_new.png, downloaded 1290 times


new
old
450
500
550
600
650
700
750
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40