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Subject: Re: Raw data read and write

Posted by [Ken Oyama](#) on Wed, 06 Dec 2006 09:47:37 GMT

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Hi all,

Concerning raw data simulation, I produced one date file with 18 DDLs data from TRD in and Christian tried to analyze this data using DATE. He found that baseline is not properly set and it is zero.

In TRAP chip, normally ADC value itself has few ten to few hundred baseline, and it is changing according to time by very low frequency time drift. This noise is filtered by digital filter (pedestal filter). ADC value should be unsigned integer of 10 bits dynamic range. If we subtract the baseline, we simply cut off all ADC values below the baseline. To avoid this problem, artificial baseline is again added after pedestal subtraction which is nominally 10 (but can be changed in TRAPsoftware).

On the other hand in AliROOT, additional baseline is not added. Baseline is simply subtracted and negative value is simply cut. This is of course not good because noise appeared only on positive ADC value. Effectively we change the baseline little bit above if we define the baseline as average signal.

I think we must do like TRAP is doing which is:

- Define some ADC intrinsic baseline (define randomly).
- Apply baseline subtraction as TRAP is doing.
- Add artificial baseline (10, as TRAP is doing).

Then digits value will fluctuate around 10, and it presents even negative value (below 10) and cross talk as well.

I think this gives impact to reconstruction part. Someone has to change reconstruction part to take into account the baseline which is not ADC intrinsic baseline but artificial baseline added by TRAP.

How do you think?

best regards,

Ken Oyama

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