Subject: STTHit timestamps
Posted by JennyTaylor on Tue, 17 Apr 2018 09:28:46 GMT
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I am working on a time clustering in the SttCellTrackFinder using Stt hits. For this I am using the STTHit time stamp and I am wondering what exactly the hit time stamp is, for example if it is the start or end of the signal. This information would be very helpful for the further development.

Best,
Jenny

Subject: Re: STTHit timestamps
Posted by Tobias Stockmanns on Tue, 17 Apr 2018 09:43:48 GMT
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Dear Jenny,

in the event-based simulation the TimeStamp of the hit is set to -1. For the time-based simulation it is the sum of eventTime + flightTime + driftTime. So the time when the signal is registered in the electronics of the STT.

Cheers,

Tobias

Subject: Re: STTHit timestamps
Posted by Michael Papenbrock on Tue, 17 Apr 2018 11:09:52 GMT
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If I'm not mistaken, this corresponds more or less to the leading edge of the signal. However, the trailing edge should be less affected by the actual flight path of the particle, since one will always have charges produced in the outer parts of the tubes when a particle enters and exits. Hence, that time information might be more useful for clustering. Will at all be possible to record either the time of the trailing edge or the time-over-threshold in the experiment?

Cheers,
Michael

Subject: Re: STTHit timestamps
Posted by Tobias Stockmanns on Tue, 17 Apr 2018 12:19:57 GMT
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Hi Michael,

have a look at the presentation from Peter Wintz on the collaboration meeting in September

https://indico.gsi.de/event/6361/contribution/0/material/slides/0.pdf.

There he used the trailing edge time to associate hits.

Cheers,

Tobias

Subject: Re: STTHit timestamps
Posted by Michael Papenbrock on Tue, 17 Apr 2018 12:30:03 GMT
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Hi Tobias,

yes, that was actually the inspiration
If I remember correctly, that was based on a test-setup and without PandaRoot, but I would
hope that it will be in principle accessible also in the final experiment. However, I haven't seen
an accessor to this kind of data in the PndSttHit class, and I'm not aware if this information is
available at all at the reconstruction stage.
Do you know more about this or is something to be brought up to Peter?

Cheers,
Michael

Subject: Re: STTHit timestamps
Posted by Tobias Stockmanns on Tue, 17 Apr 2018 12:35:48 GMT
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The STT is still lacking a proper digitization stage in PandaRoot and the output format of the
STT electronics is not fixed. So, it is not clear if this information is available but if it proves to be
usefull in simulations then it would be an argument to request it.

Cheers,

Tobias