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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

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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

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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

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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

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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

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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

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