

Dear Vertex2023 Editors,

Thank you very much for your careful read of my contribution and your valuable comments and suggestions.

I have made necessary improvements and uploaded the revised paper to the POS Author pages. Please find below my response to your particular points in red.

Best regards,  
Jaroslaw

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Dear Jaroslaw Wiehczynski,  
please revise your contribution PoS(VERTEX2023)010 (The Silicon Vertex Detector of the Belle II Experiment) according to the following comments:

This contribution is a well written account of the recent operational experience of the Belle SVD, as the backbone for tracking. Only simple revision needed for a few minor points to clarify/correct:

Line 114: "less then 3 ns" -> "less than 3 ns"

-> corrected

Line 119: Not clear this 2000 times "faster" timing wrt CDC is a fair/relevant characterization. The SVD event time resolution of  $\sim 1$ ns is obtained from combining individual hit time measurements from all track hits in the same event, according to the previous sentence. The "time" of CDC hit up to 2000ns is more of a feature of the drift chamber using different drift times to distinguish the hit positions. Although individual hit can have a rather large absolute time variation up to 2000ns, the CDC readout TDC can also determine the hit time to  $\sim 1$ ns and using all CDC hits in the event to determine the event  $t_0$  to 1ns level, which would be apple-apple comparison for "event time" resolution. It is rather confusing to compete the event time RESOLUTION to be "faster". The fast charge collection in silicon doesn't mean you get to know the time faster than CDC hit times for trigger latency purposes as in both case the latency is dominated by signal shaping and readout time microseconds later. Silicon hits are in fact more difficult to utilize for trigger as they take longer to readout. The more relevant advantage is probably the the narrower SPREAD of the individual silicon hit times so that you can make a narrower time window cut earlier to reduce the processing time of silicon hits to make them usable for HLT trigger.

-> thank you for pointing out the inadequacy in this description. In fact the sentence has been written in a confusing way, while the real idea was that the software computation of the 'event time' is much faster for the SVD.

I corrected the sentence as follows:

"the 'event time' can be computed by the SVD with a resolution of the order of 1 ns, while the computation is around 2000 times faster than the one based on CDC."

Fig 3: Since there is an effort to point out easier features like P side resultion is better than N side due to pitch differences, how about also explaining the less obvious feature of especially N side resolution becomes worse at both incident angle of 0 or larger incident angles ? This may actually help many readers not knowing the answer.

-> Thank you for this suggestion. I added two additional sentences to describe in more detail the cluster resolution plots:

"As the calculation of the cluster position is based on the collection of the charge, which is shared among the strips, the worse resolution near zero-degree incident angle results from the increased likelihood of a single-strip cluster. Also, a small deterioration of the resolution at large angles is observed as a consequence of an increased multiple scattering probability of a passing particle."

Line 124: "deteriorate" is a verb like "decay" typically describe the action of the object itself e.g. sensor performance deteriorates, but not action exerted by something else (e.g. machine background) on the object (sensor). Machine background degrades sensor performance may be a more appropriate wording.

-> modified according to the suggestion

Line 137: "thus" is typically a transition word that declares outcome after stating the reason just before. Here, there seems no quantitative reason to justify why 6 MRad dose is considered to be the limit.

L214: "guaranties" -> "guarantees"

-> corrected