Abstract:
- We prefer to keep the abstract a little broader to tie this paper to the PS module as a whole. No changes were implemented.

Section 1 (intro):
- Most Type A comments implemented.
- Removed 20 cm for a smoother sentence (and since the information is readily available in the figure).
- Regarding the L1 latency: we've changed “allow” to “use” to avoid any confusion.

Section 2 (the SSA):
- Type A comments implemented.
- Implemented the description of the edge/level/XOR sensitive digitization (we now mention in the Experimental Setup section that we use the edge-sensitive mode).
- Added “when triggered” to clarify that the sensor image is only sent to HLT on a trigger.
- Removed the needless mention of the strip sensor when talking about threshold setting, but have kept “short strip” in several cases.

Section 3 (experimental setup):
- Changed “tuning” to “tuning of individual channels” in the last sentence to make clear that it’s the trimming that is unavailable for HIP.
- Sensor strip pitch correctly described.
- Changed the trimming description to avoid saying we modify the thresholds.
- The interposer’s role is mechanical (so that we can bump bond to the SSAs), which is already mentioned in the text.
- We prefer not to talk about expected performance for a different thickness, as we didn’t measure it.
- We prefer not to mention the manufacturer of the sensor.
- We’ll keep the 1 um inactive thickness in, as we had previously been asked about it when quoting just the active thickness (lest the reader erroneously believe there is some relevant amount of silicon not being described).
- Fig 5: we’ve removed the repetition in the caption (specifically we’ve removed the version from the “bottom” description).

Section 3 (test beam parameters):
- Type A comment implemented
- For the telescope resolution, we could cite https://www.sciencedirect.com/science/article/abs/pii/S0168900215015521?via%3Dihub, though the resolution quoted there is better than when we operated our beam (due to changes in the telescope and setup since this measurement was made).
- Removed “all” from “all silicon tracking”

Section 3 (DAQ):
- Most Type A comments implemented
- Noted we read out via IPBus
- Removed “outer” from PH2-ACF description as it will also serve the inner tracker
- We think the 2x8 -1 = 15 is clear.
- We prefer not to complicate things further mentioning the missing MaPSA.

Section 4 (Simulation):
Most Type A comments implemented (and we picked American English for now).
Unfortunately diagrams are difficult to relate to the text for this section since all the
effects sit on top of each other. No new figure was added.
We’ve kept the sentence starting with “the goal” where it is, as we first need to introduce
that we have a model before we can describe its use.
To make clear that the angle alpha is a lab variable (i.e. that we control) we’ve added
“DUT” to its descriptor.
The model is not intended to be a perfect representation of the system, so the deviation
from “expected” is not a concern. The most likely culprit is the angle eta which might
artificially “thicken” the sensor. We’ve added a sentence to make this clear when we
discuss that angle.
We prefer to keep the table where it is, as the actual fits aren’t presented in Section 5.
The model simulates the collection of charge once a path for the proton is chosen, so we
think this is an ok title for the chapter.

Section 5 (Hit Clustering):
- We will diversify the color/marker of Fig 7, and remove the spurious x-error bars and
modify the axis title as you asked.
- To keep the false hits to a very low level, as mentioned one sentence on.
- We will double check the percentages quoted in the text vs in the figure

Section 5 (Alignment):
- Most Type A comments implemented
- Figure 8 just needs to prove that the alignment was successful and that future results
come from this aligned system. Resolution details are given in a later section.

Section 5 (Timing Efficiency):
- Removed lines from figure 9
- Indeed, we only keep ¼ events that line up with the clocks. We’ve now noted this in the
paper.

Section 5 (Efficiency and Cluster Size):
- Most Type A comments implemented.
- The sample sizes here are quite large, so the difference in HIP/DET is meaningful and
we think it’s important to draw attention to it.

Section 5 (Resolution):
- We’ve added the RMS for single and two-strip clusters to this section.
- The simulated distributions are normalized to the total number of events recorded, but
the fraction of single and two-cluster events is extracted from the model.
- Interstip position (and agreement with the model) we feel is sufficiently related to the
resolution measurement that we can leave it in this section.
- We’ve changed Fig 14’s caption to reflect that these are efficiencies.
- We feel the chapter title is fine, other chapters titles already have efficiency in them, so it
might be confusing. We’ve added the RMS to the text in case a reader needs to
reference them, but the plots are complex enough as it is, so we prefer to leave them as
they are.
- Not sure what line this refers to.
- We agree that “by eye” isn’t good enough, so we’ve added RMSs.
• We prefer not to rebin, the fluctuations take away from the picture and it’s nice to show how well we model the falling edges of the distributions.

Section 6 (Conclusion):
• Removed MPA+SSA to avoid confusion.
• See above.

Extra Type A:
• It’s not clear to us if we can do non-italic \mu at this stage. If the journal has a preference we can modify things then.
• Thanks to your and others review, these chapters have seen several changes. We hope they are clearer now.

Extra Type B:
• The stub data was simply not analysed, largely because, once they were confirmed to be identical to our offline reconstruction, there was no measurement we could make that couldn’t also be made with our own offline reconstruction. Clusters straddling the two SSAs are fully incorporated in the results we show.