Dear Reviewer,

Thanks a lot for your careful review. I changed most of the notes
that you had and discussed them a bit further here.
Hope this is now ok for you.
Thanks a lot,
Denis Oliveira Damazio on behalf of the ATLAS Collaboration

- Figure 1 too small, the right part is not readable, there should be still margin to get it bigger
>>>> I increased the size of the pictures in Figure 1 (both, actually), to the
biggest size without making the paper grow beyond the 6 pages limits. Hope
that is good enough.

- 1.: CSC are not part of the Muon Spectrometer since LS2.... to be removed and to be included the NSW if you want to to the list of systems, otherwise I would remove all the achronims of muon detectors here..
>>>> I took your suggestion and removed all Muon detector achronims. Hope this is ok.

-1.: define <mu> as the pileup when you speak about it the first time (I could not find it)
>>>> The first time I speak about mu is its definition, actually :
"The LHC nominally provides 40 MHz of bunch crossings with 27.5 independent proton collisions in each one, a number referred to as <μ>"

- 1.: I cannot get where the number 27.5 comes from... is that the pileup? then it should be higher...
>>>> The nominal value of the LHC luminosity is 10^{34}cm-2s-1 which corresponds to 27.5 collisions/bunch crossing (which is the definition of <mu>).
The higher value is because the LHC very quickly exceeded the nominal value.

- 1: missing the closing dot
>>>> ops. Sorry.

- Figure2 in the figure description: middle one is the eFEX, not muon, to be changed in the text. Also need to uniform, at least in the text the figure 2 left and middle, one has the item name, the other eFEX and legacy, it is not obvious to not experts that is referring to thr same items..
>>>> The description was wrong. Thanks for pointing out. I changed slightly the text. That said, I am not sure I understand the question about uniformity.
If the point is the 25 versus 22GeV, the point is that these are the two
mostly "equivalent" items. The better calibration of the eFex allows us
to define a cut value (25 in eFex, 22 in Legacy) that is closer to the
real intended value. It is true that the legend on both figures is not
precisely defined as coming from the same item, but I cannot change an
approved (by the ATLAS community) plot.

- start of pag3: I would add " between Run2 and Run3" before " ATLAS undertook a number of majour upgrades"
>>>> ok. Thanks. It makes the message more evident.

- pag3 top part: ET (to be put T small). - New Small Wheel (NSW), not New Muon Wheels the achronim
>>>> Both changed. We usually say missing ET in the community (just to explain).
For some reason, I messed up the NSW definition. sorry.

- Chapter 3: eFEX is not defined, maybe to be defined some lines above whe you define the feature extractors (to be add the achnonim there maybe?)
>>>> I added only to the Achronisms. Hope that is ok. They are also defined
in the picture 1 itself. Well, at least their connections are there.

- chapter 3: 4kHz as NSW rate saving; if you are speaking about L1 rate it was higher than 4kHz in 2024

>>>> There was a reduction of 4 kHz, not that the rate is 4 kHz. I believe
this is clear in the text. So, I did not change it.

- Figure 3 caption: plots are vs <mu> while you refer to luminosity in the caption. I would stick with mu as in the picture
>>>> Ok. That helps also to save a bit of space (I hope). I ended up reducing even further the caption.

- pag4:
-- "The next steps in the
sequence, suffer less from this effect, but depend on the output of the fast tracking pass to seed the track fitting and extrapolating for precise reconstruction." not very well readable, probably to remove the ","
>>>> Yes, this was also not very good. I tried to change a bit the sentence to convey a similar message : "The following algorithms performing precise track fitting and extrapolation are more resilient to <μ>, but must be seeded by this Fast Tracking."

-- "Its efficiency is quite include to a loose transverse energy cut" -> Also here to review English. Maybe something like: " Its efficiency is quite sensitive to a loose transverse energy cut."
>>>> Ah. Ok. Here the issue is another one. The correct word was "inclusive", not included. Hope that with this modification it becomes simpler.

-- Figure 4: relation -> Relation
>>>> Ops. Thanks!

-- PT -> move T to lower case
>>>> Maybe this : p_T ?

-- Reference 4, to add a dot at the end
>>>> ops..