Minutes of INTT meeting 03/13/2025

[Shan-Yu]
- It is not clear how and when FPHX and ROC full flags are issued.
- A clear gap in the BCO diff indicates the abort gap.
- Since the FPHX full flag is stored in each hit information, the number of the FPHX full flag won't exceed the number of INTT raw hits.
- The # of full FPHX flag vs # of INTTRaw hits distribution for the normal chips look like the plots in page 4.

[Tomoya]
- In general, update all dates to 3/14/2025 for all of the WIP plots (It's not January)
- Slide 30: Approved. Need to modify to use points for data.
- Slide 32: Approved. Modify to show beam type. Change the Run23 MC data to Run24 MC data. Make axis label and font size bigger.
- Slide 38: Approved. Y axis is the number of cluster, and show how many events analyzed.
- Slide 40: Approved.
- Slide 43: Approved. Make the font size of the legend in the right bottom panel bigger for the right plot.
- Slide 48: Approved. Make the font size of the legend in the right bottom panel bigger for the both plots. For the right plot, move the "Cluster z side = xxx" to somewhere else not to overlap with histograms.
- Slide 50: Approved. Need to modify to use points for data, and lines for MC. In the legend, you need space between equations (e.g. < 30 cm), and change the description to "data |MBD z vertex|" and "Full MC |Truth z vertex|".

[Ryota]
- In general please be careful to use the word "efficiency" because this is not actual efficiency of the INTT but just a feasibility test of the efficiency estimation by using only 2 layers.
- Slide 8, 9: Approved. Add titles and units (cm) for X, Y axis. Need to explain this is single muon MC in the legend. Also need to explain what is the difference of the point color means. Don't change the color of the vertex point.
- Slide 10: Approved. Don't use the work "efficiency". "Num of good pairs/Num of outer clusters" would be better? (Cheng-Wei will give you a better wording.) Need the unit of Residual (cm). Change the unit of window from mm to cm to be same as Residual unit. Need more information in the legend (single Muon MC, z-vertex, Incident direction etc.)
- Slide 11: Approved. Modify as the same way as suggested for the plot in slide 10.
- Slide 13: Approved. Modify as the same way as suggested for the plot in slide 10.
Comment: How you can explain the 10% reduction of efficiency?
- Slide 14: Approved. Set Y range from 0 to 800. Remove the current legend and put more informative legend (explanation of black and red histograms, beam, z-vertex etc.) Don't use "vec_outer.Phi()", but use "Phi". Also need the unit of phi.
Comment: It would be great if you combine two plots into one plot (The ratio at the bottom), but if it's difficult, it

would be okay to have two separate plots.
- Slide 15: Approved. Modify as the same say as the plot slide 14. Y axis range of the left panel should be 0 to 3000.
- Slide 19, 20: These event display plots will be removed from the WIP request.
- Slide 21 is not for WIP request, but just an internal plot requested by Yasuyuki.
- Slide 22, 23: Approved. Modify as the same way as suggested for the plot slide 10. The Y axis rage of the right plot should be same for slide 10, 11, 13, 22, 23. Need to set a proper Y axis range for the left plot of slide 23.
- Slide 24: Approved. Window need the unit and it should be cm unit. Need to emphasize "This is still work in progress" in the plot.

[Mai]
- Slide 3: Approved. Change p+p to Au+Au. The X and Y axis ranges should be same as the preliminary plot.
Comment: Why there is no statistics more than 3000 hits? Check the number of events processed compared with preliminary statistics.
- Slide 4, 5: Approved. Put Y axis title. Change p+p to Au+Au.
Comment: You should mention that the mixup events distribution still contain some fraction of real collision somewhere in the slide.
- Slide 7: Approved. Set the same Y axis range as the preliminary (0 to 0.5).
Comment: If you compare this to the preliminary in the slide, you should more information of what is the update from the preliminary in the legend.
- Slide 8: Approved. Set the same Y axis range as the preliminary (0 to 0.4).
Comment: This WIP result is after removing the contribution from real collisions, so there is no bias from the real collisions.
- Slide 9: Approved. Put space between sPHENIX and Work. Change Au+Au to p+p.
- Slide 10: Approved. Same modification as the plot in slide 9. Also need to explain what is read and black histogram in the legend.