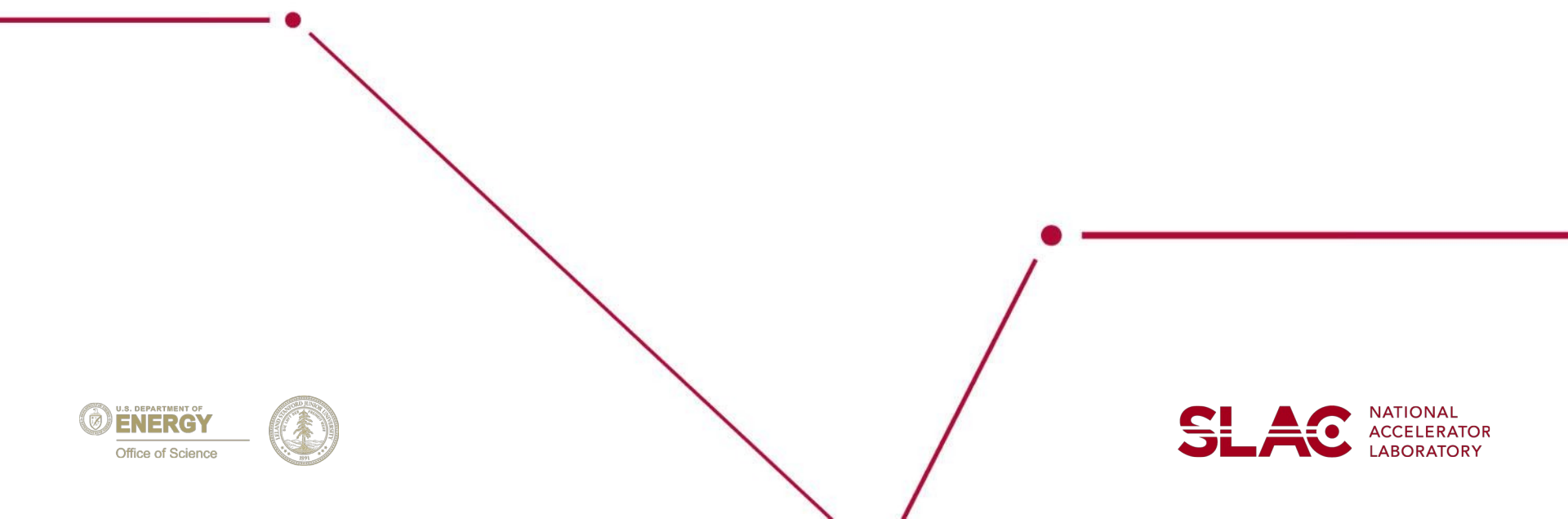


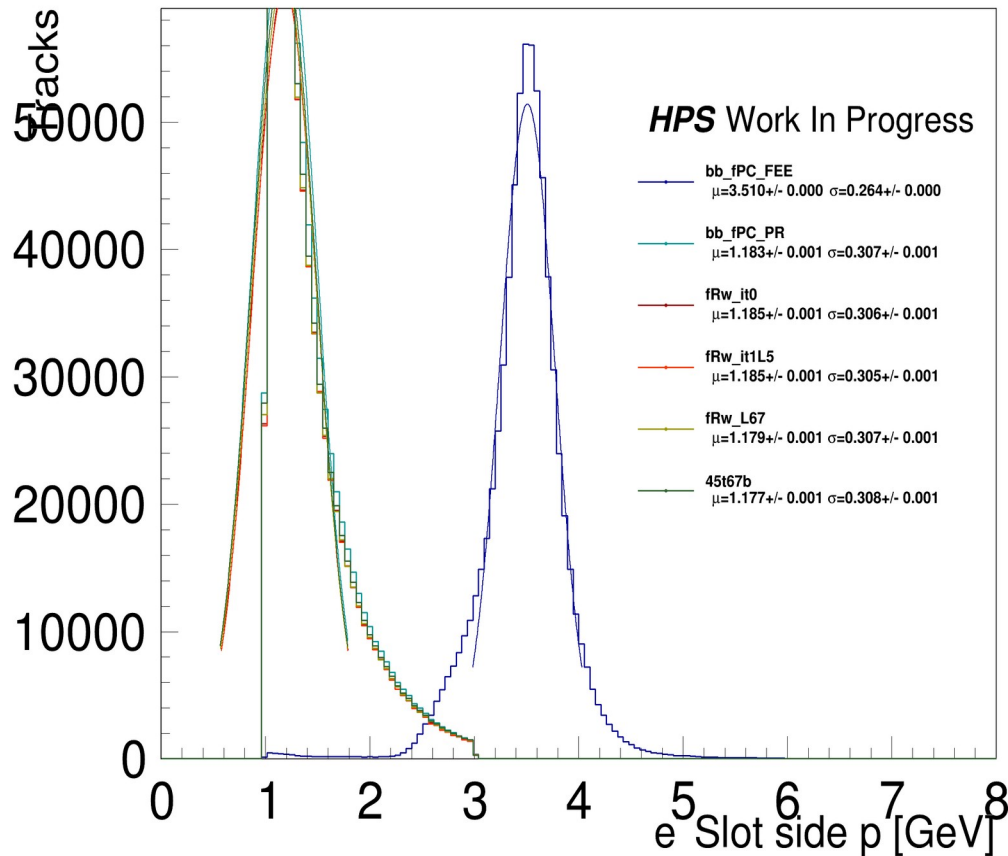
Alignment Status and Plans

Cameron Bravo (SLAC)



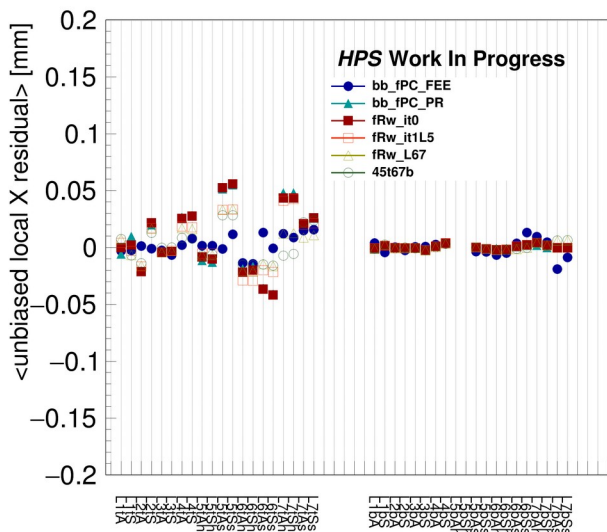
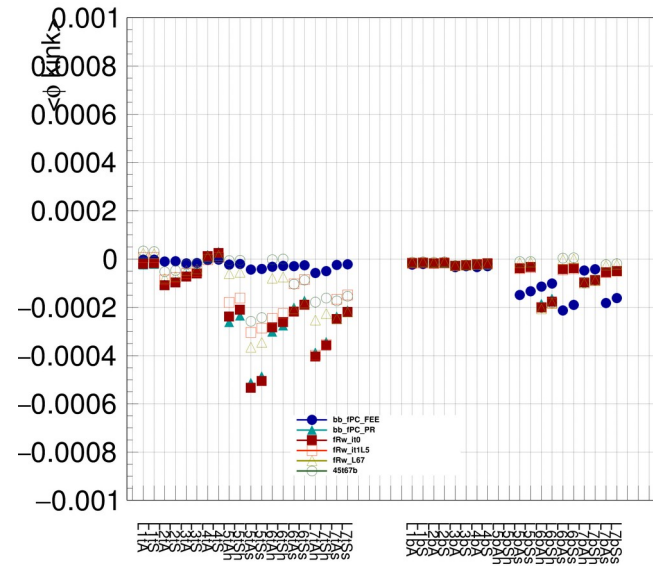
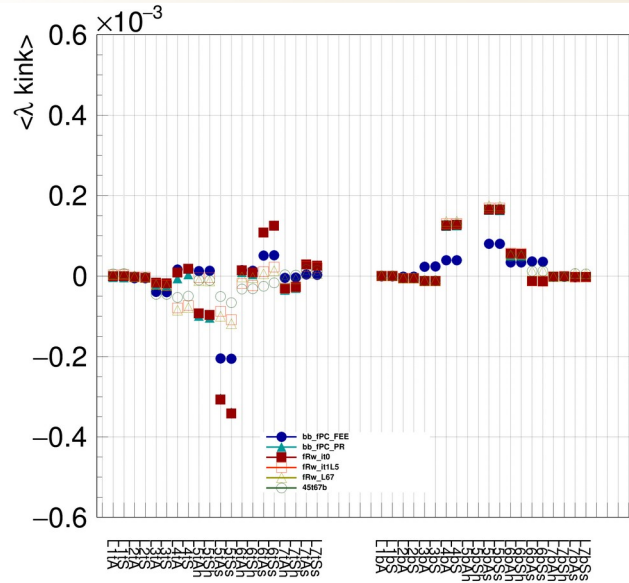
- Update on progress of 2021 detector alignment
- Focus on Rw alignment of sensors
- What do we need?
- Where are we going?
- How are we getting there?

Summary of Selection and Iterations



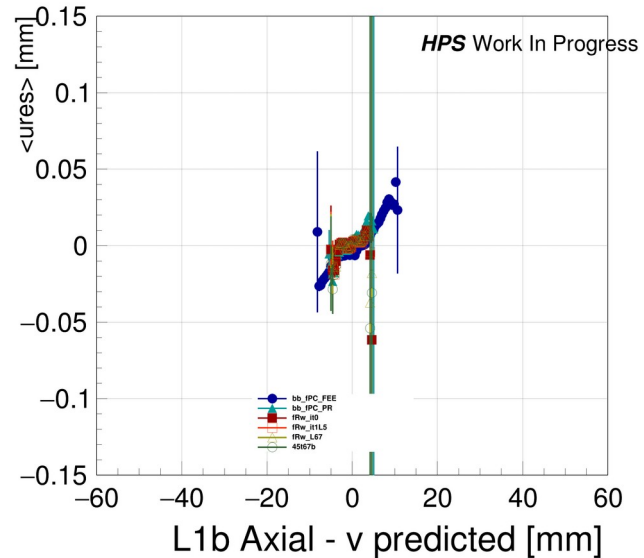
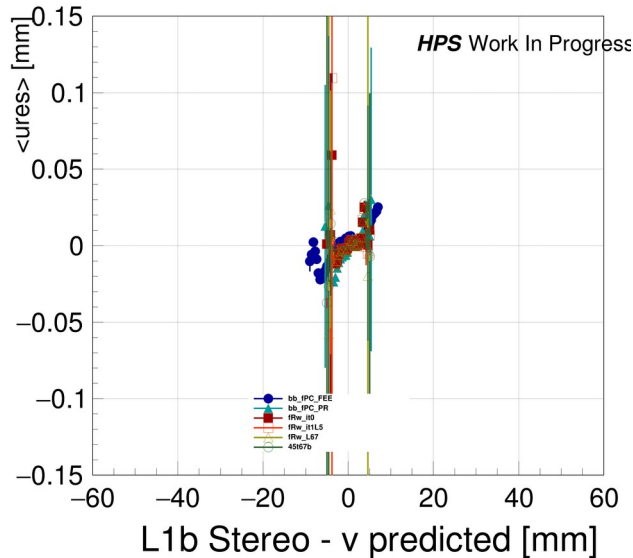
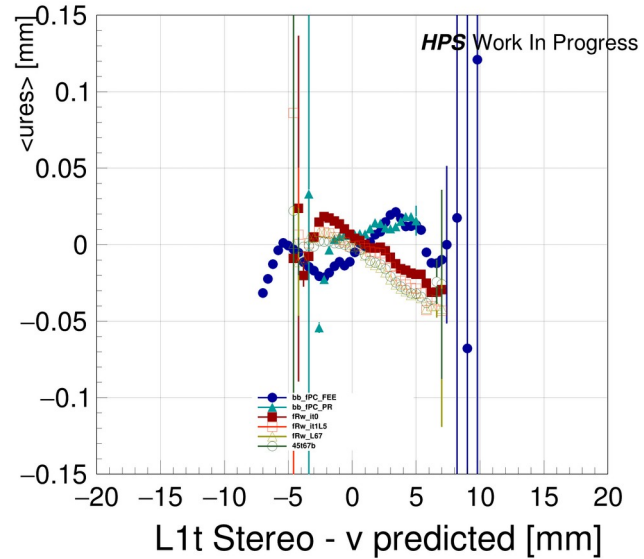
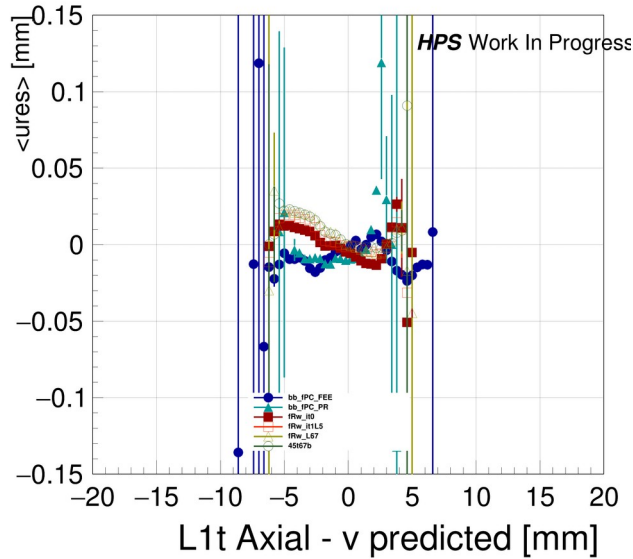
- All plots are the same set of detectors/selection
- First two are same detector
 - FEE trigger with ≥ 5 hits on track
 - Physics tracks with ≥ 6 hits on track
- Four alignment iterations
 - Rw of first 3 layers
 - Rw/Tu of layer 5
 - Rw/Tu of layers 6&7 top only
 - Rw/Tu of layers 4&5 top and 6&7 bottom₃

Track Kinks and Unbiased Residuals

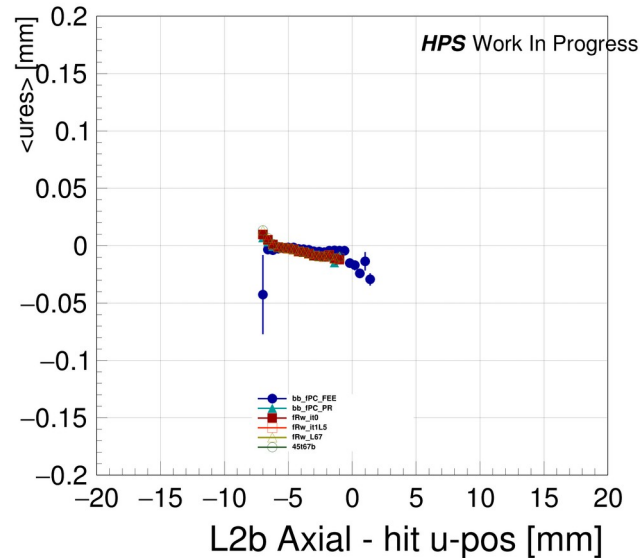
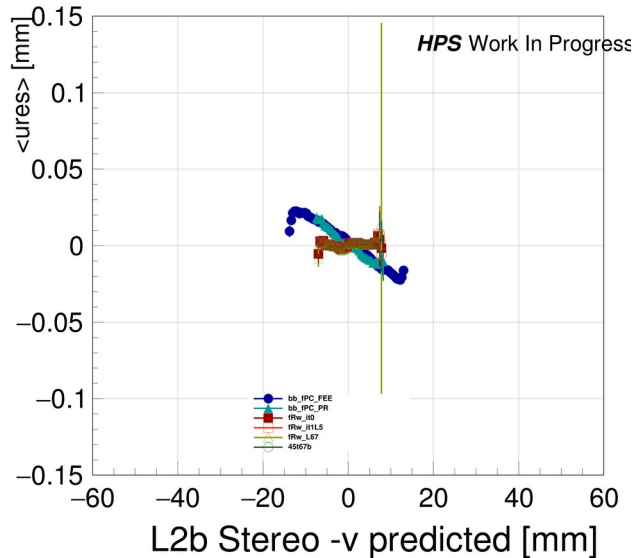
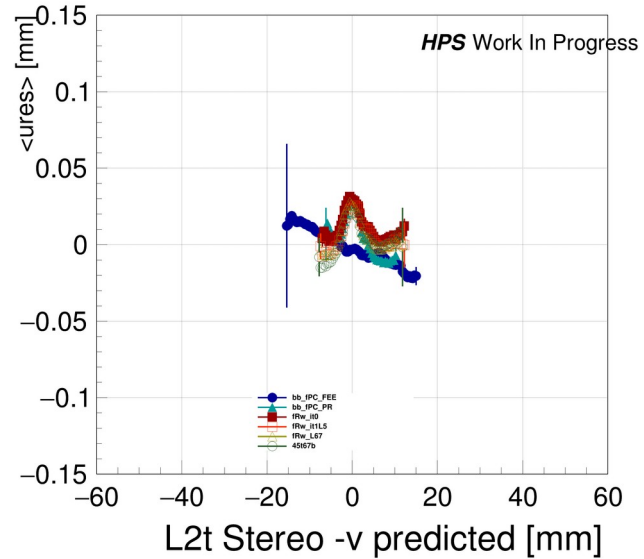
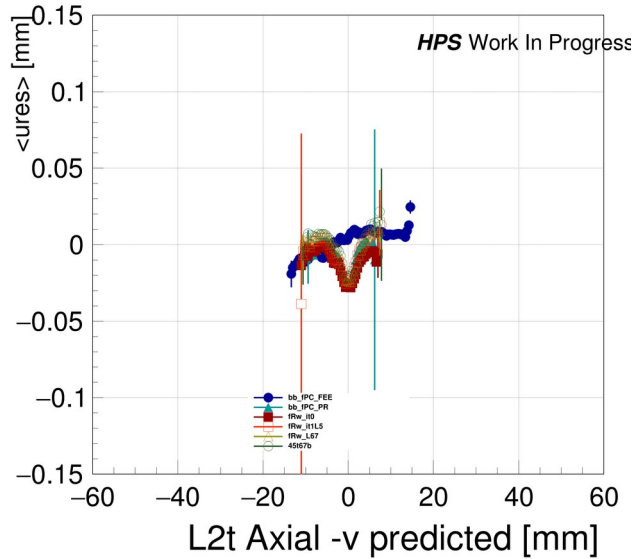


- Improvements observed in iterations freeing Rw
- Differences in these metrics observed for FEE tracks vs physics tracks
- Overall bottom is looking pretty close by these metrics, top not far behind

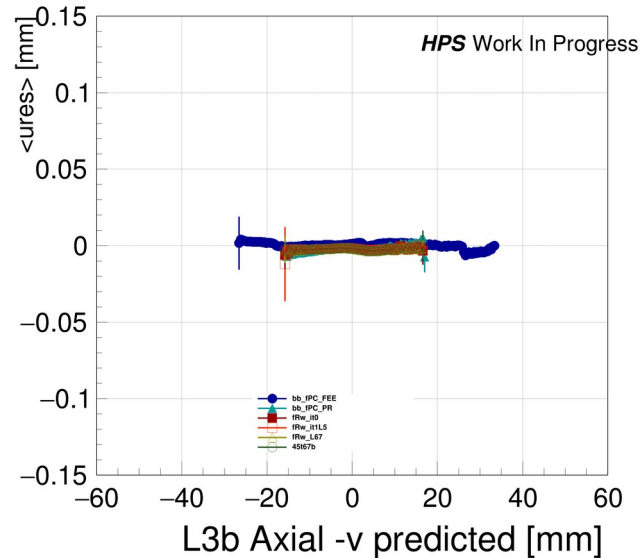
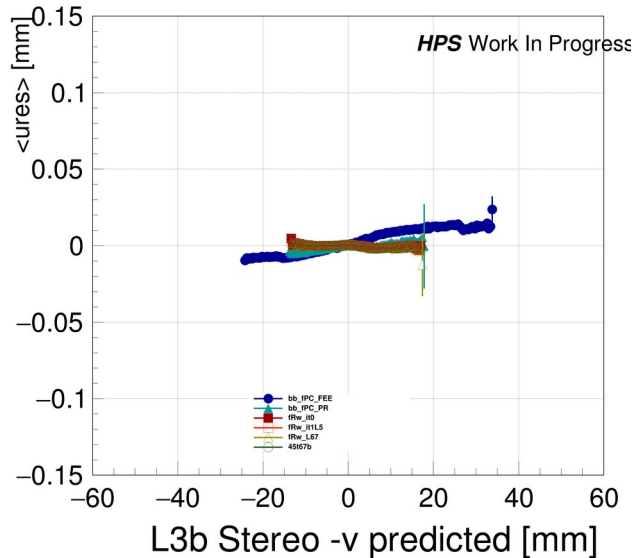
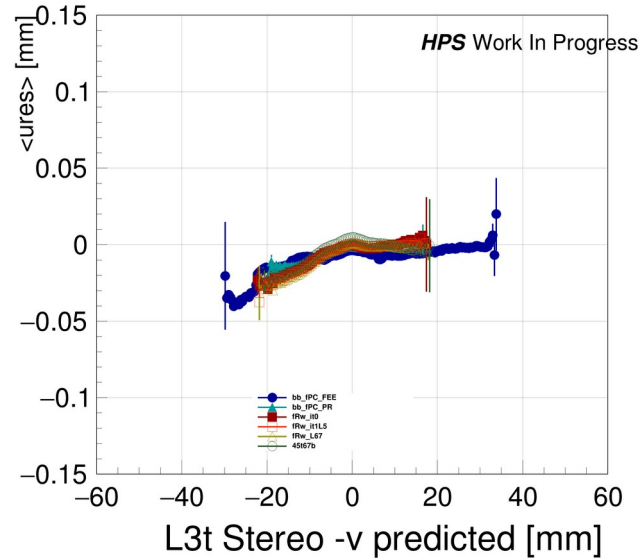
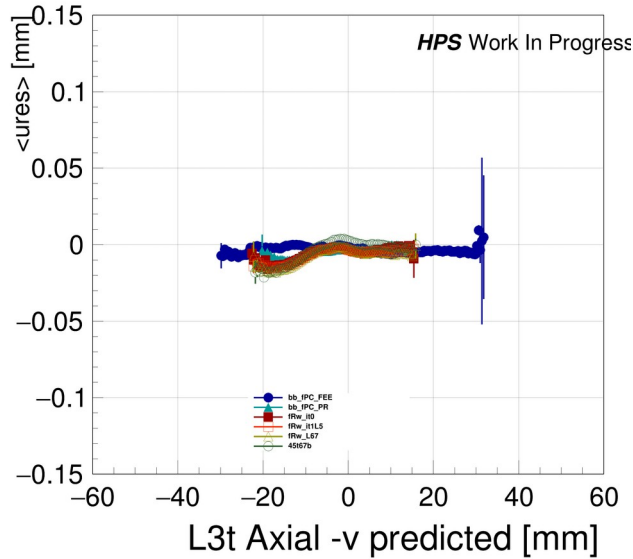
Unbiased Residuals vs Projected v-position



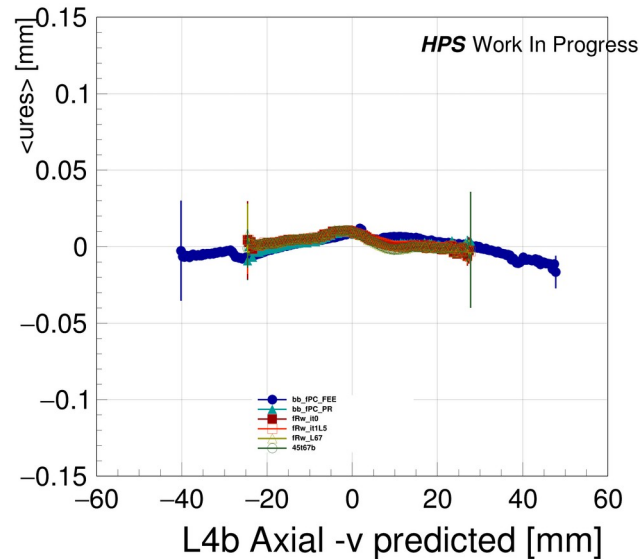
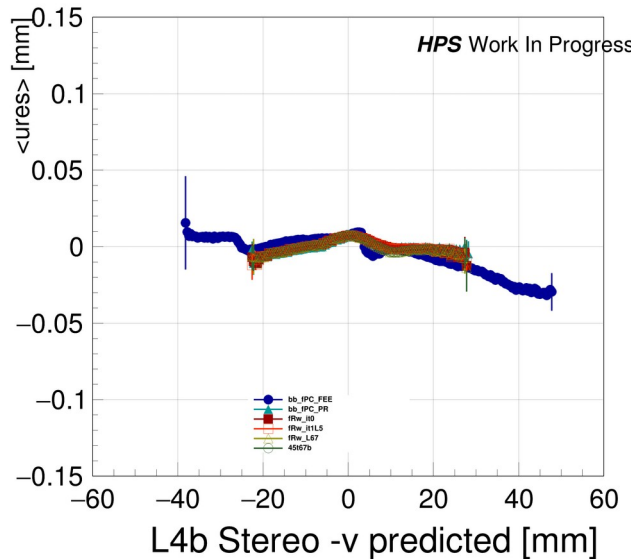
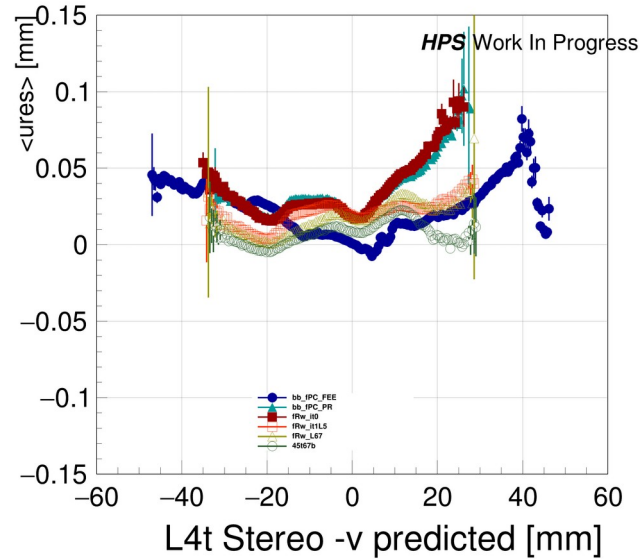
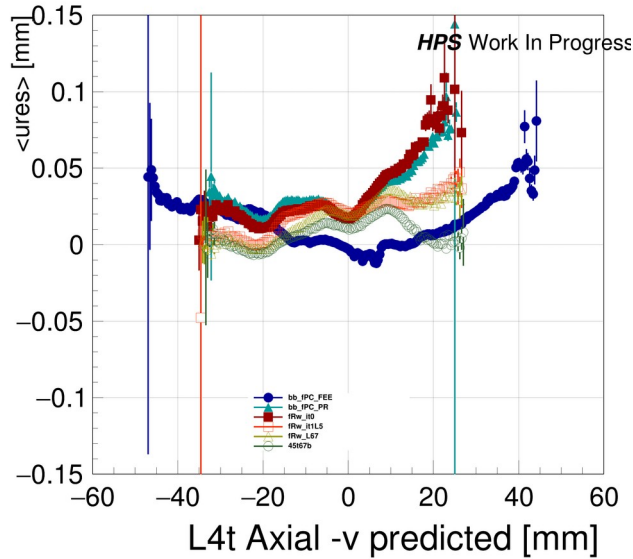
Unbiased Residuals vs Projected v-position



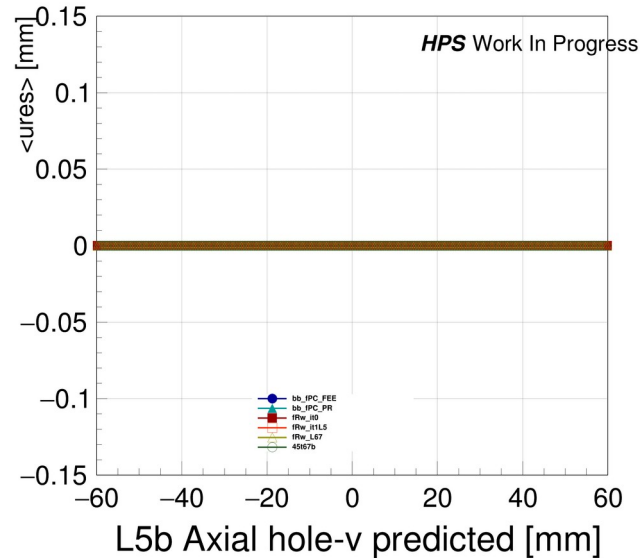
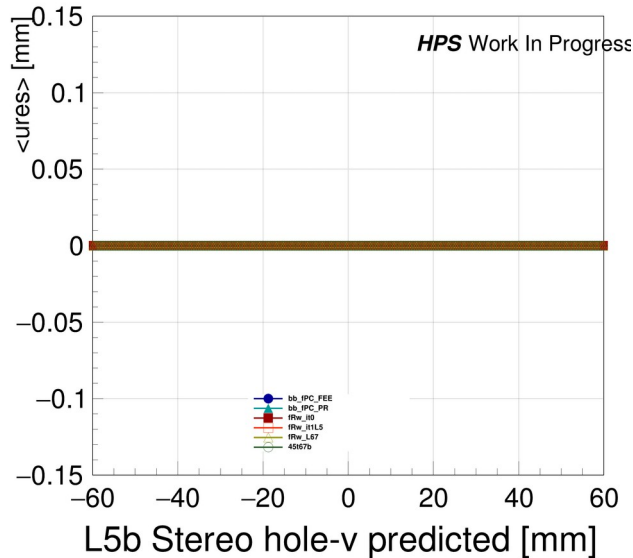
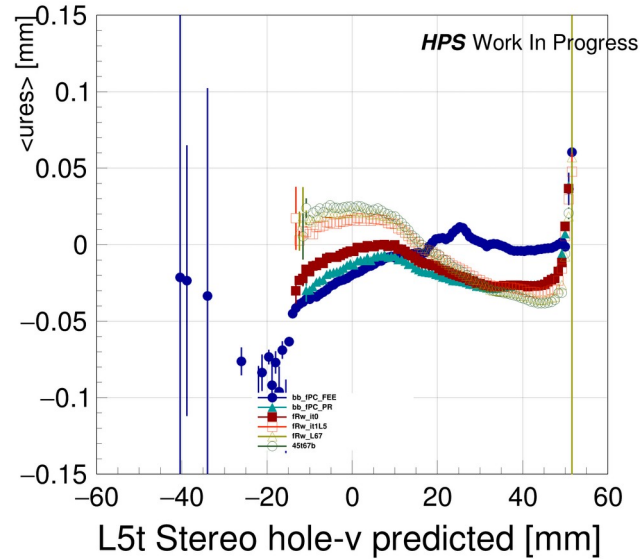
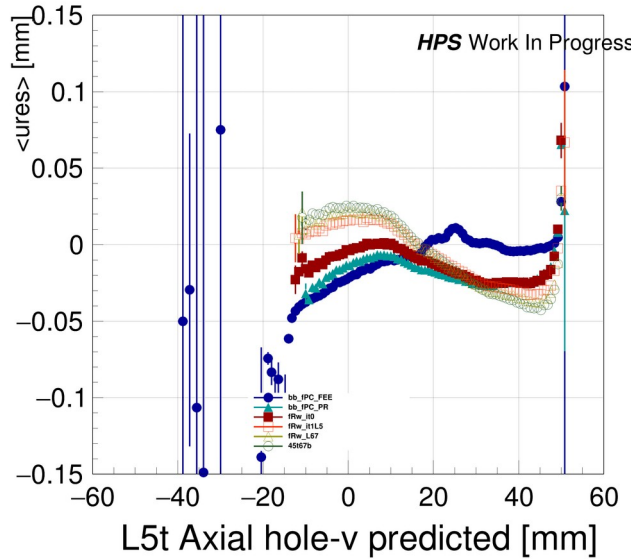
Unbiased Residuals vs Projected v-position



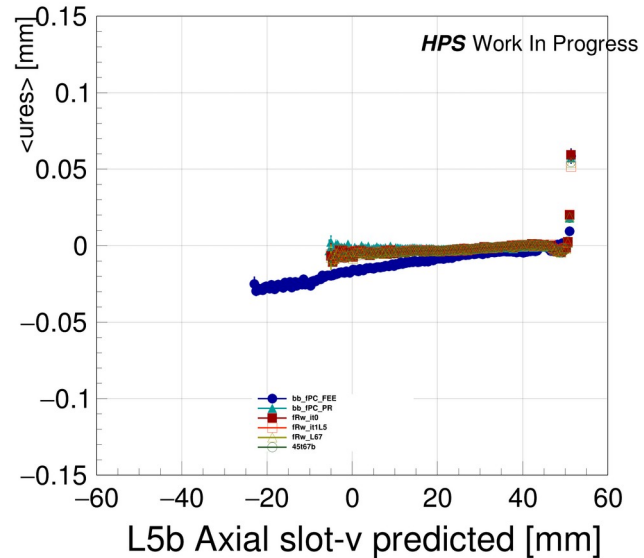
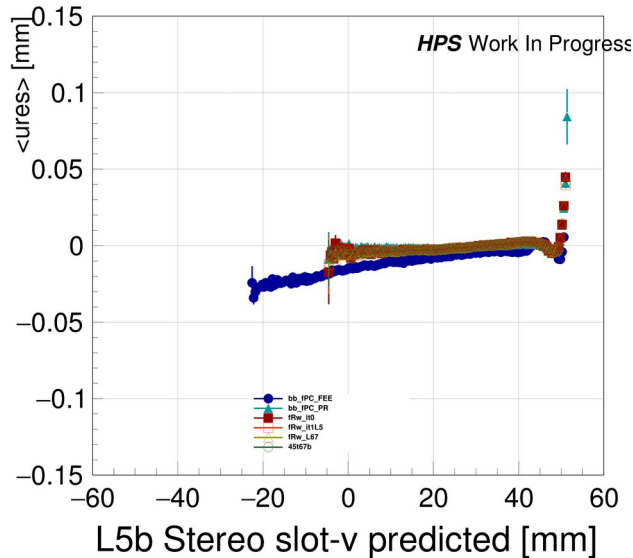
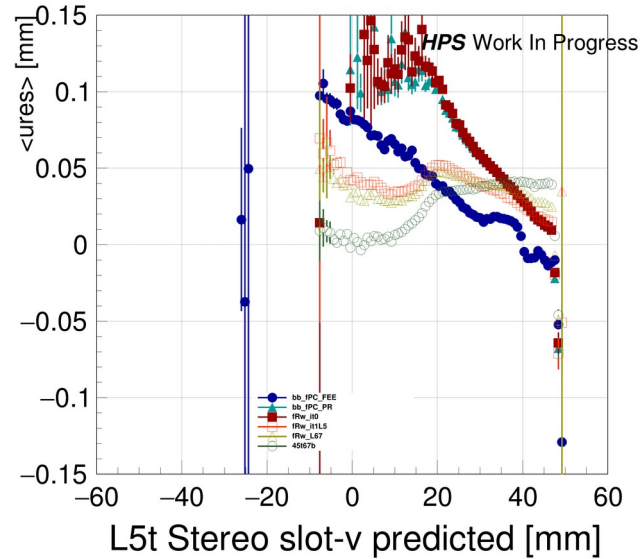
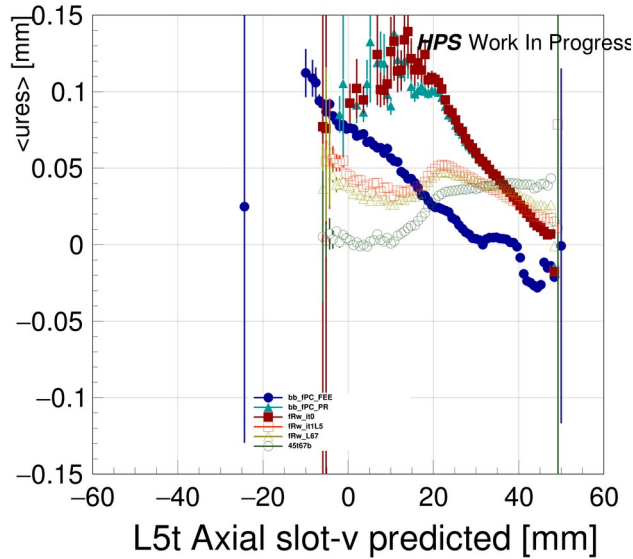
Unbiased Residuals vs Projected v-position



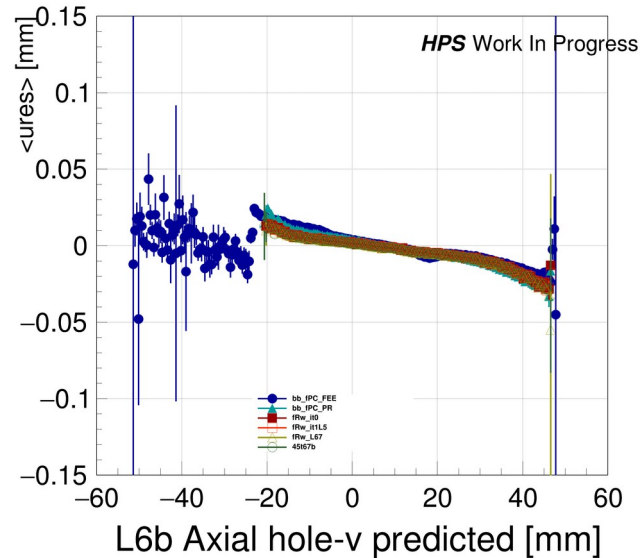
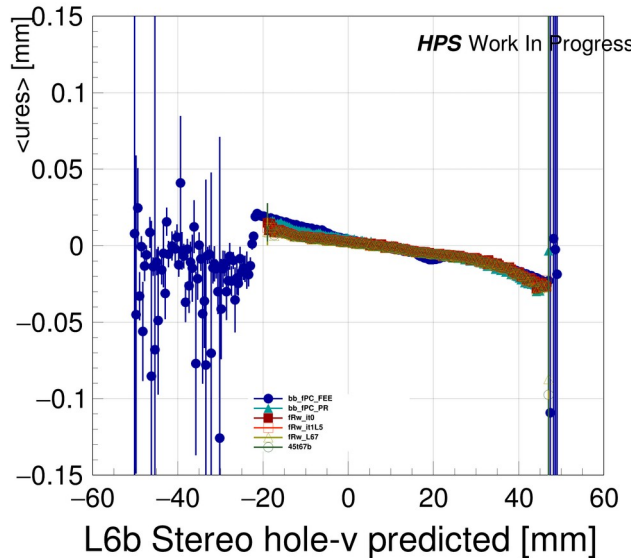
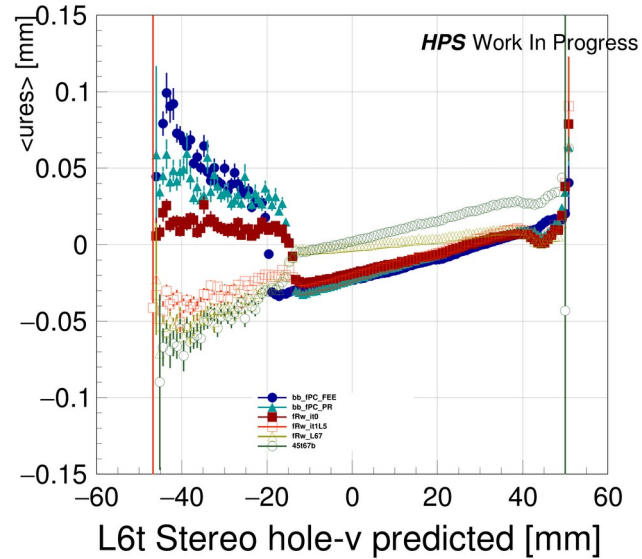
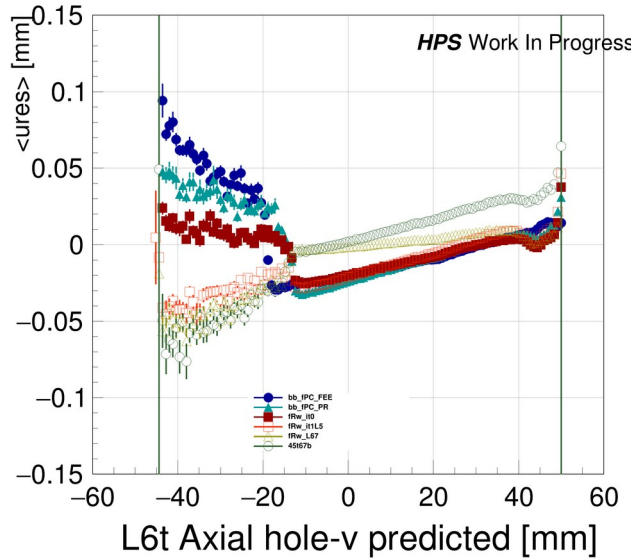
Unbiased Residuals vs Projected v-position



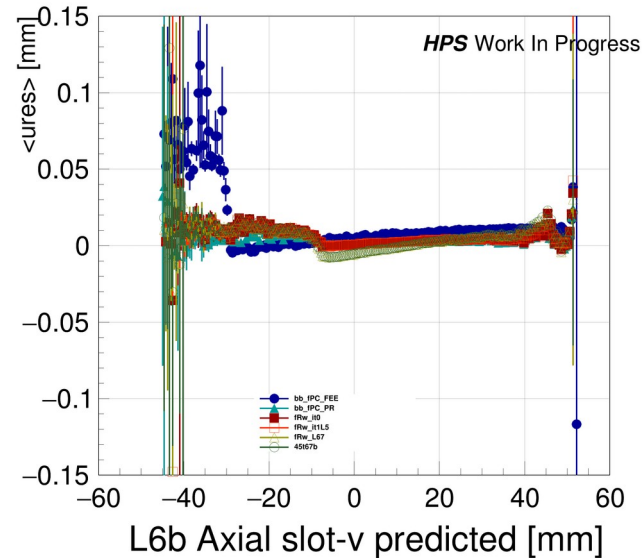
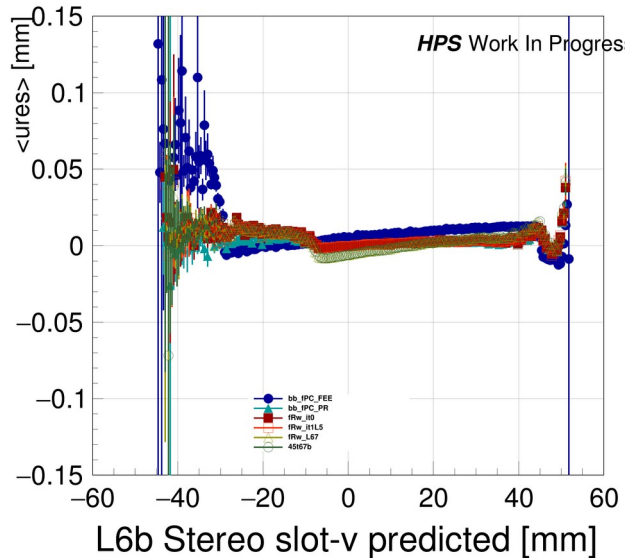
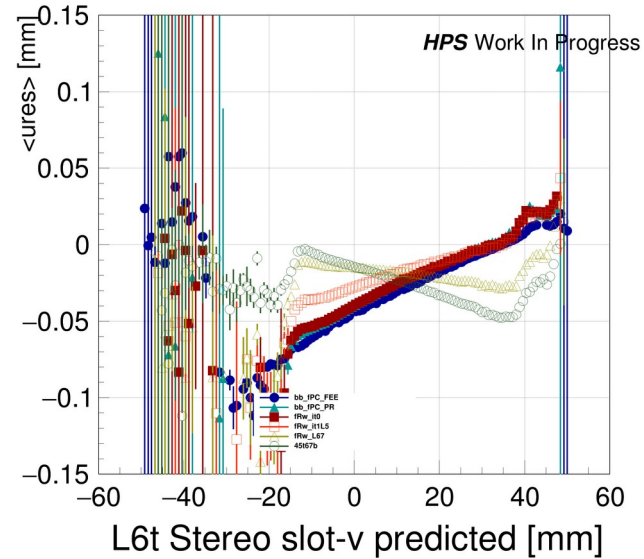
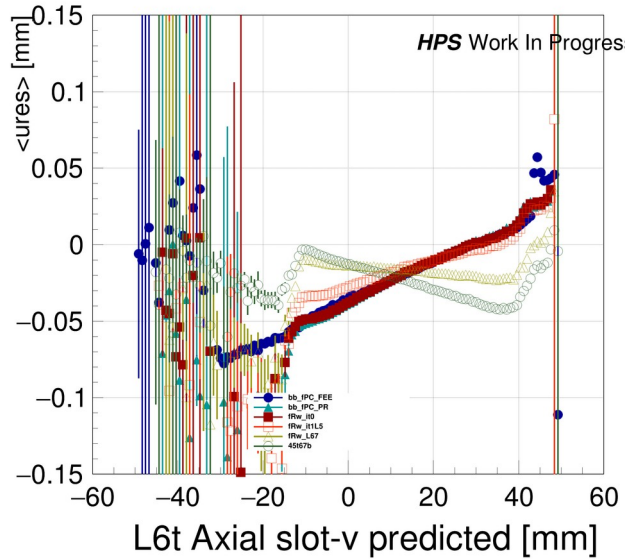
Unbiased Residuals vs Projected v-position



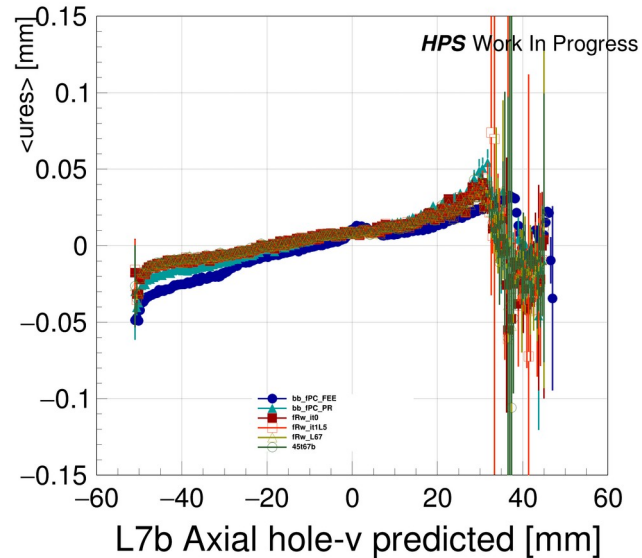
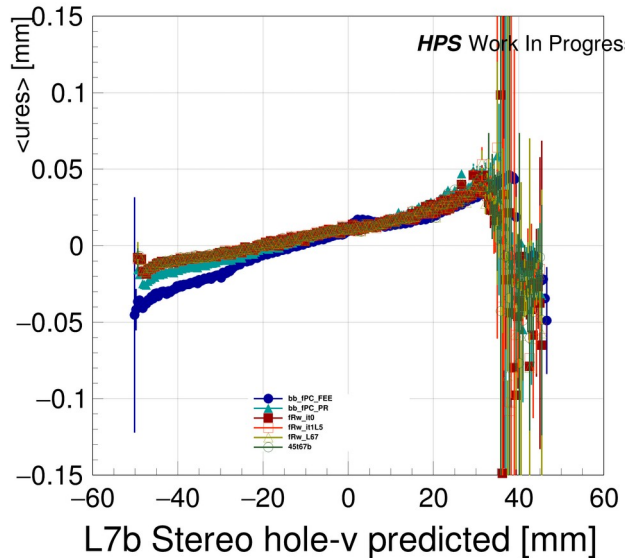
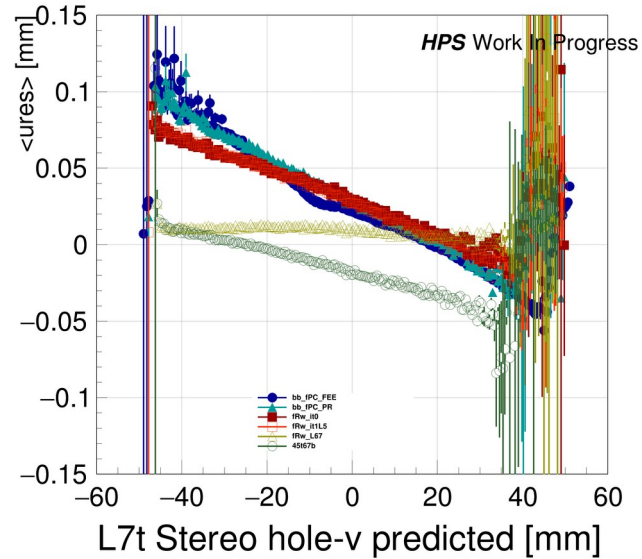
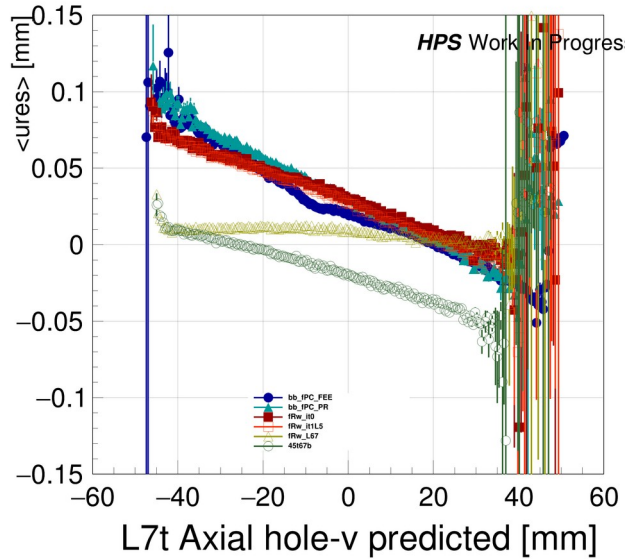
Unbiased Residuals vs Projected v-position



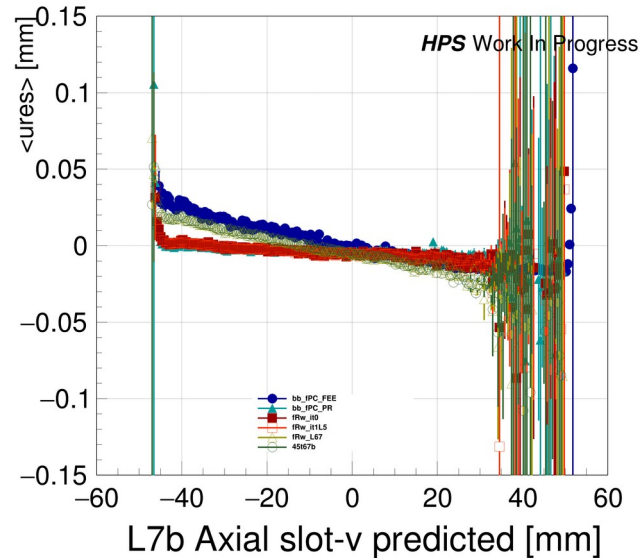
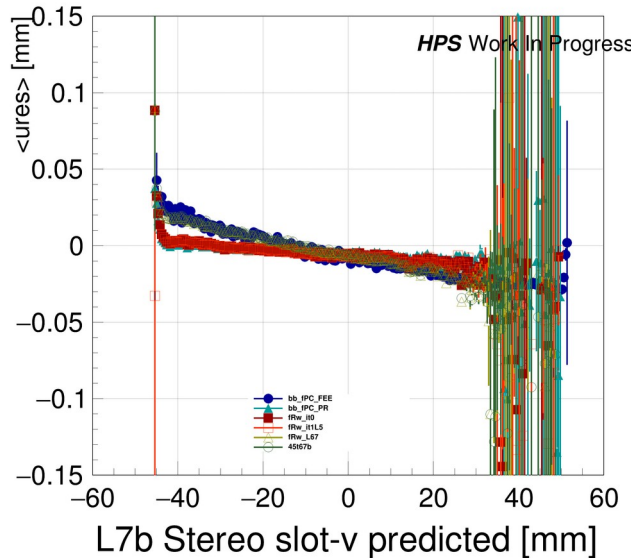
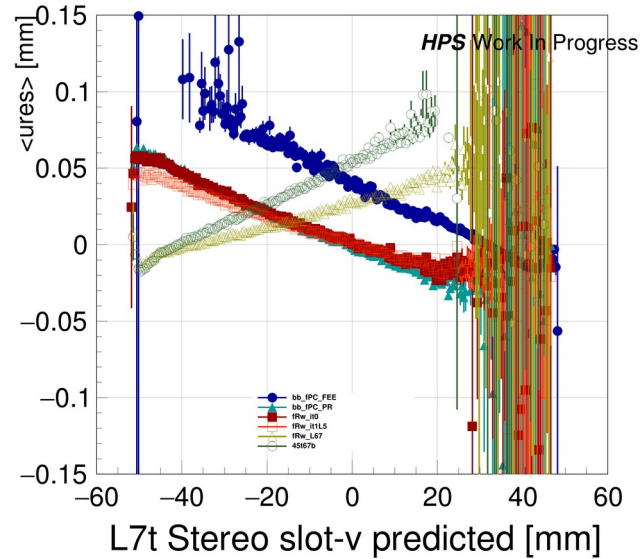
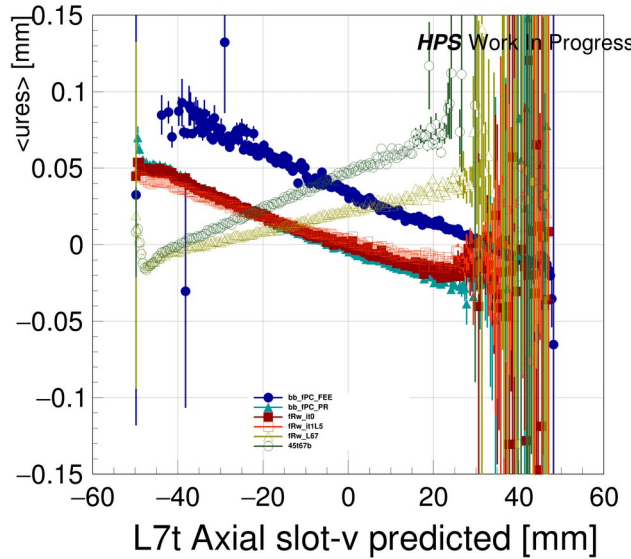
Unbiased Residuals vs Projected v-position



Unbiased Residuals vs Projected v-position

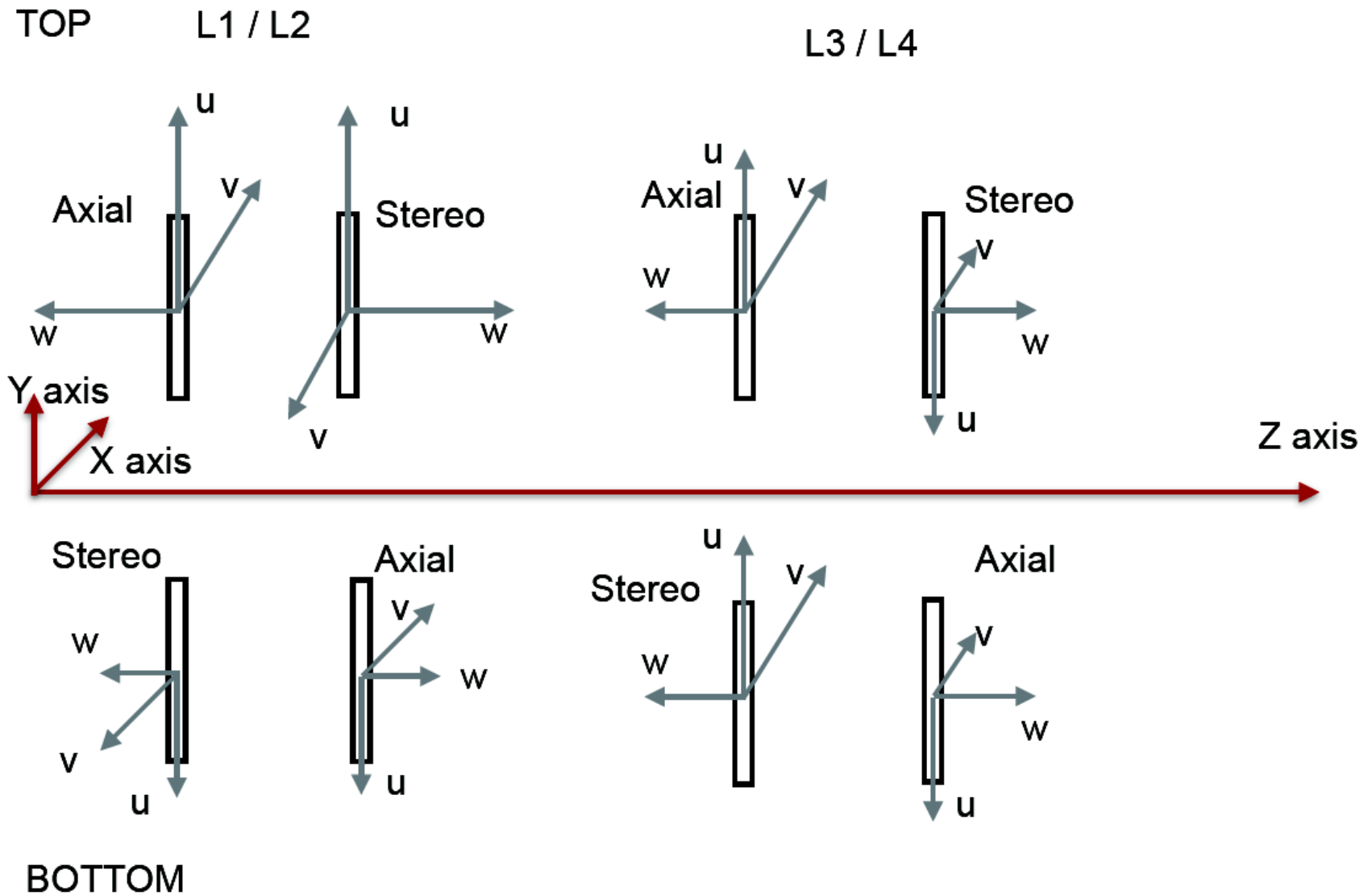


Unbiased Residuals vs Projected v-position



- Still not done with Rw alignment, needs more iterations
- Need to spend time focusing on alignment plots to help understand some pathological issues seen in 2019 and 2021
- Put together MC studies with ideal distributions
 - Make sure conditions of MC match data properly
 - Want FEE and tritrig+beam for comparisons to data
- More helpful to people doing work if discussions focus more on understanding issues and how to fix them than discussing generally what we need to decide we are done
 - It will not be so difficult to decide we are close enough when we get there, focus should be more on details and less on what the overall abstract goal post is
 - Everyone recognizes a touchdown, few can run the ball into the end zone

Local Coordinates L1-4



Local Coordinates L5-7

