

System Performance Paper Track Matching

DRAFT - MICE Internal

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1 Global Track Matching

All pre-preliminary i.e. totally internal. All captions need fixing. All words need fixing. Some plots need fixing.

The overall detector performance can be validated by extrapolating tracks from one detector to another and comparing the reconstructed coordinates with the extrapolated values. Tracks measured in the upstream tracker are extrapolated upstream to TOF1 and TOF0, and downstream to TKD and TOF2. Where there are materials in the beamline, the energy change on passing through the material is estimated using the most probably energy loss, as given by [?]] DO EQUATION

anequation (1)

Material thicknesses are approximated by the on-axis thickness. In order to reduce the effect of scattering from apertures, only events whose projected trajectory is significantly distant from the apertures are considered in this analysis.

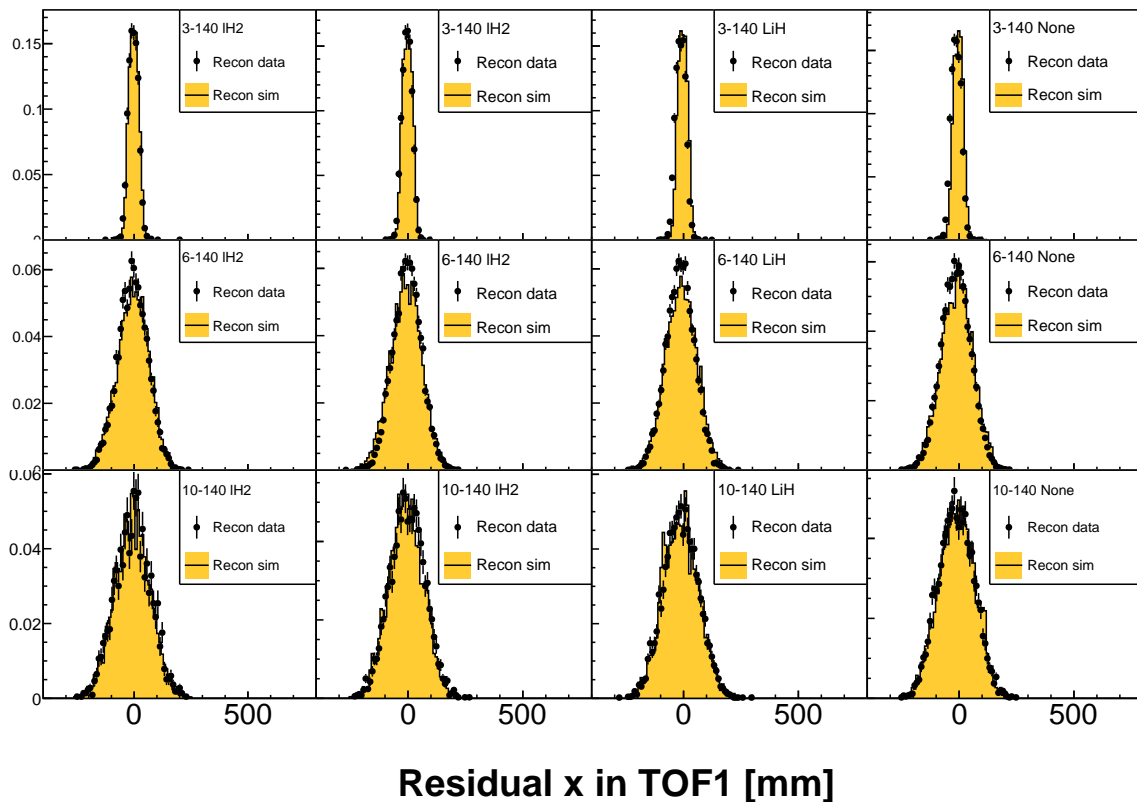


Figure 1: Residual horizontal (x) position in TOF1 of tracker tracks following extrapolation from TKU.

The extrapolated position following extrapolation to TOF1 is shown in fig. ?? and ?. Interpretation??

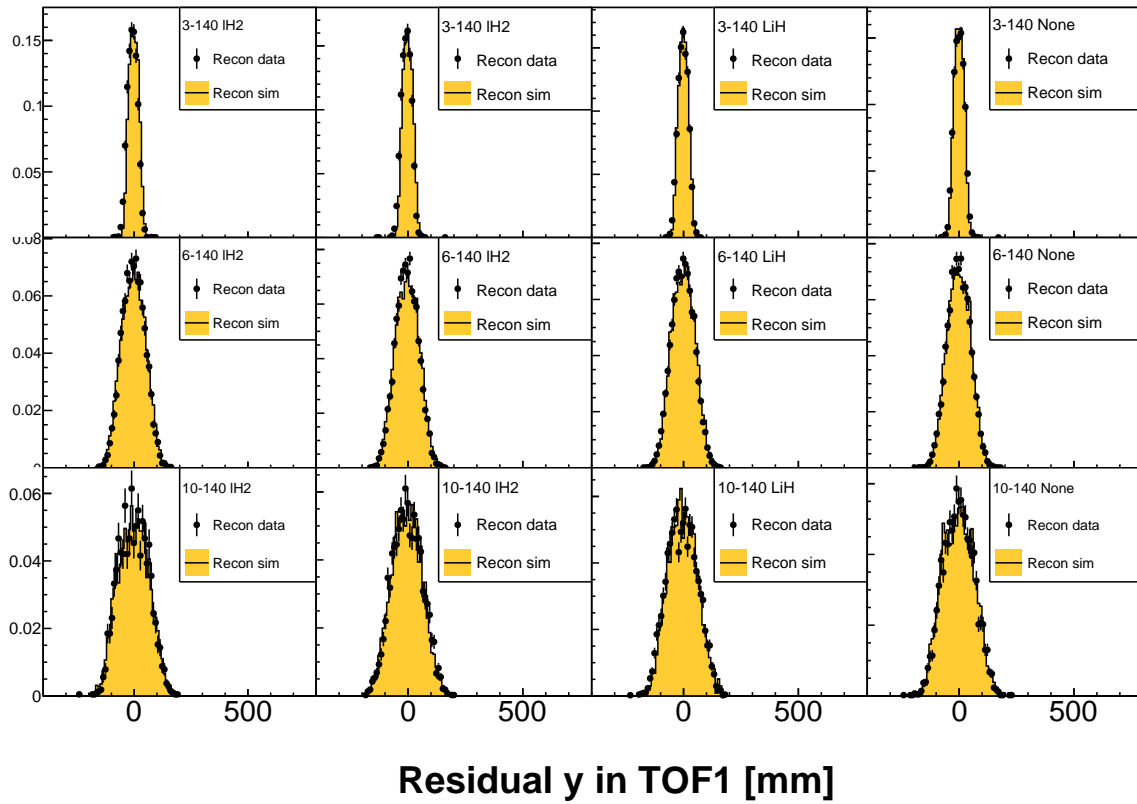


Figure 2: Residual vertical (y) position in TOF1 of tracker tracks following extrapolation from TKU.

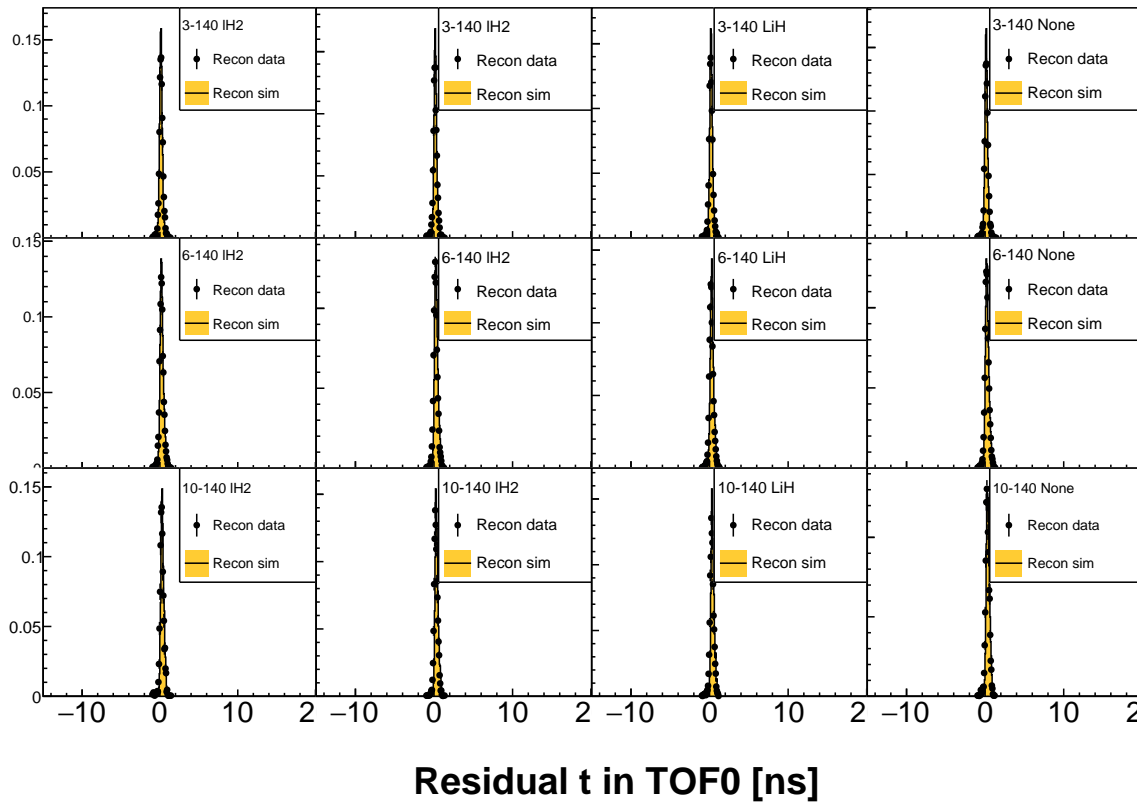


Figure 3: Residual TOF0 time of the extrapolated track. Track trajectories were drawn from TKU, while the track times were drawn from TOF1 with appropriate offsets for time-of-flight from TKU to TOF1 considered.

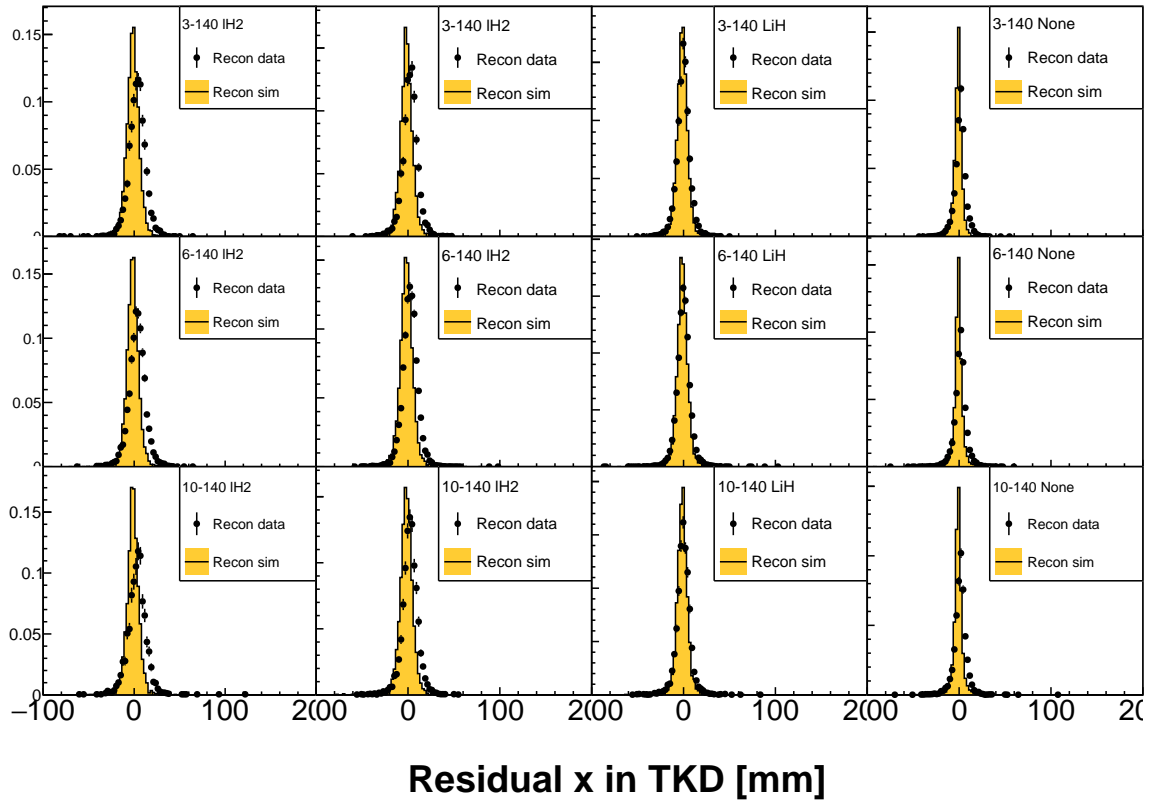


Figure 4: TKD x position.

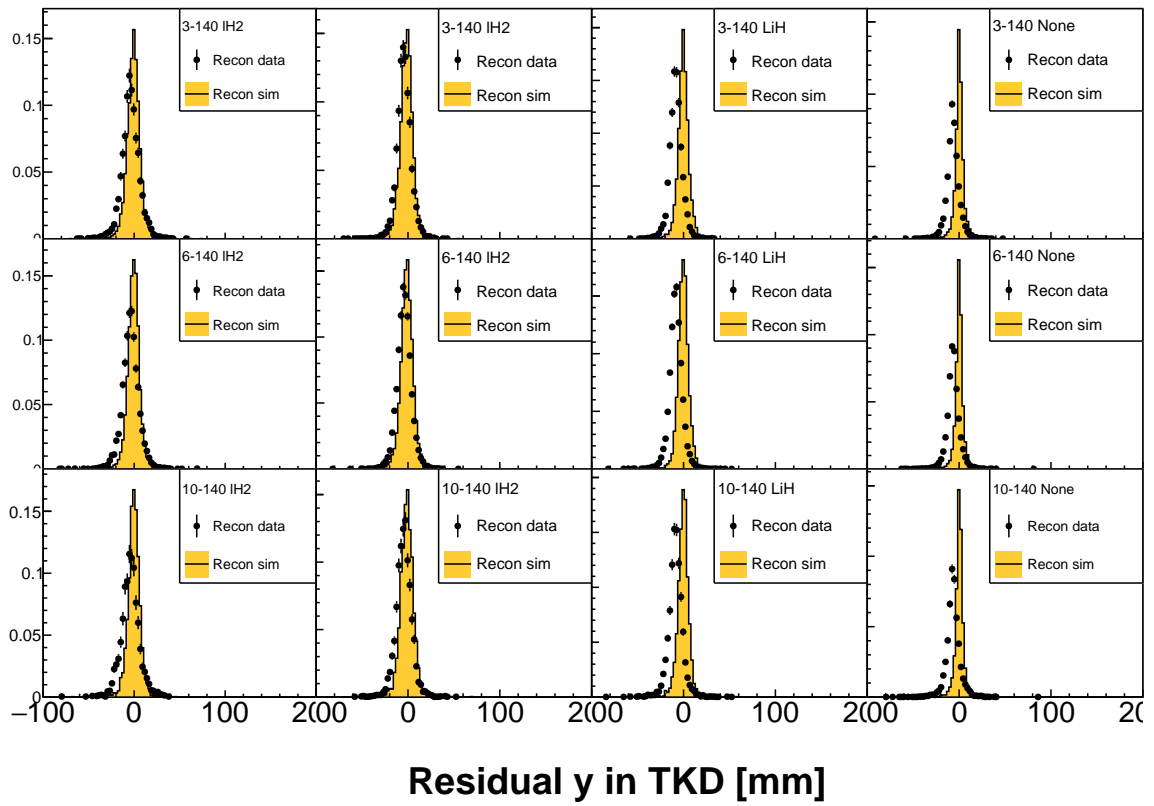


Figure 5: TKD y position.

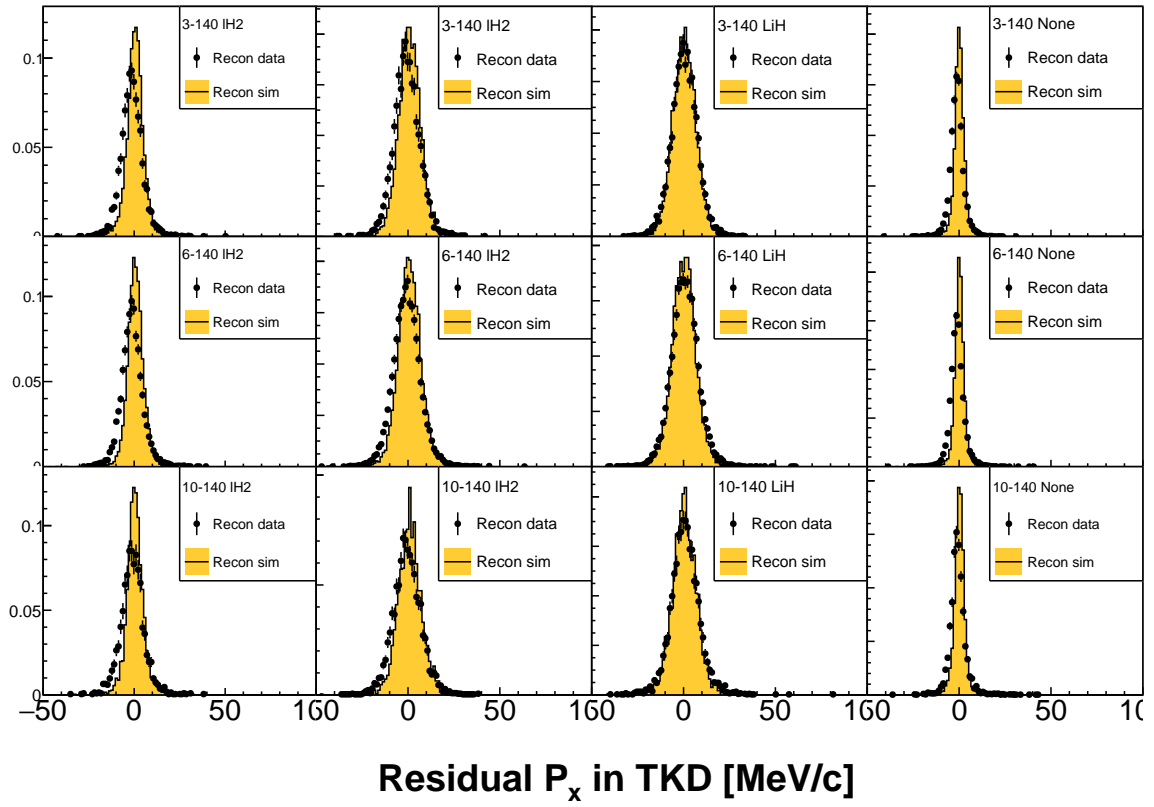


Figure 6: TKD py momentum.

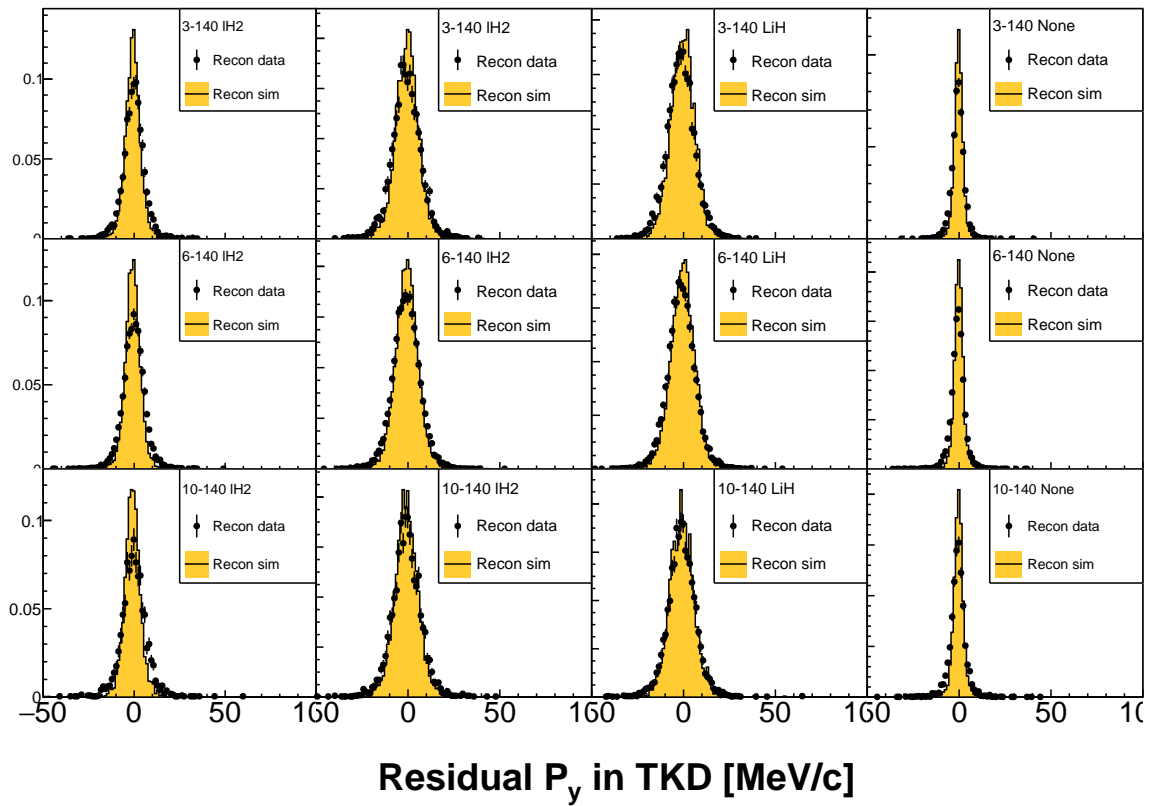


Figure 7: TKD px momentum.

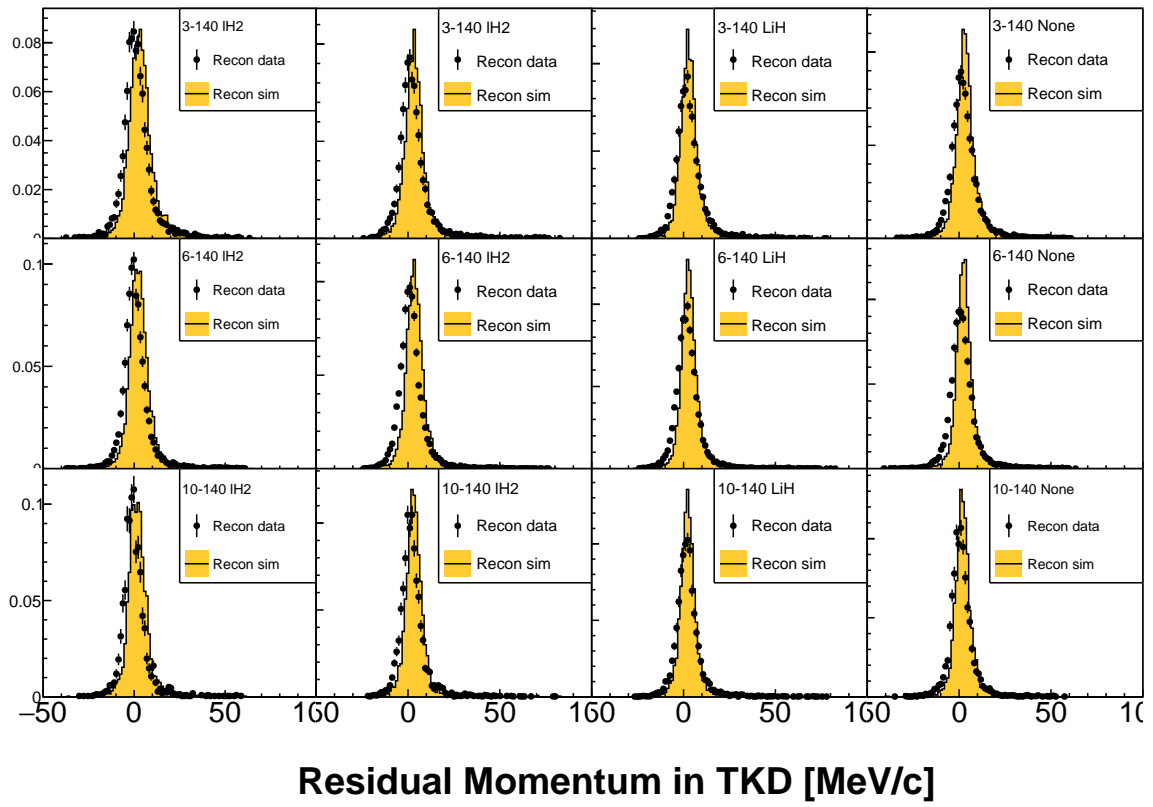


Figure 8: TKD total momentum.

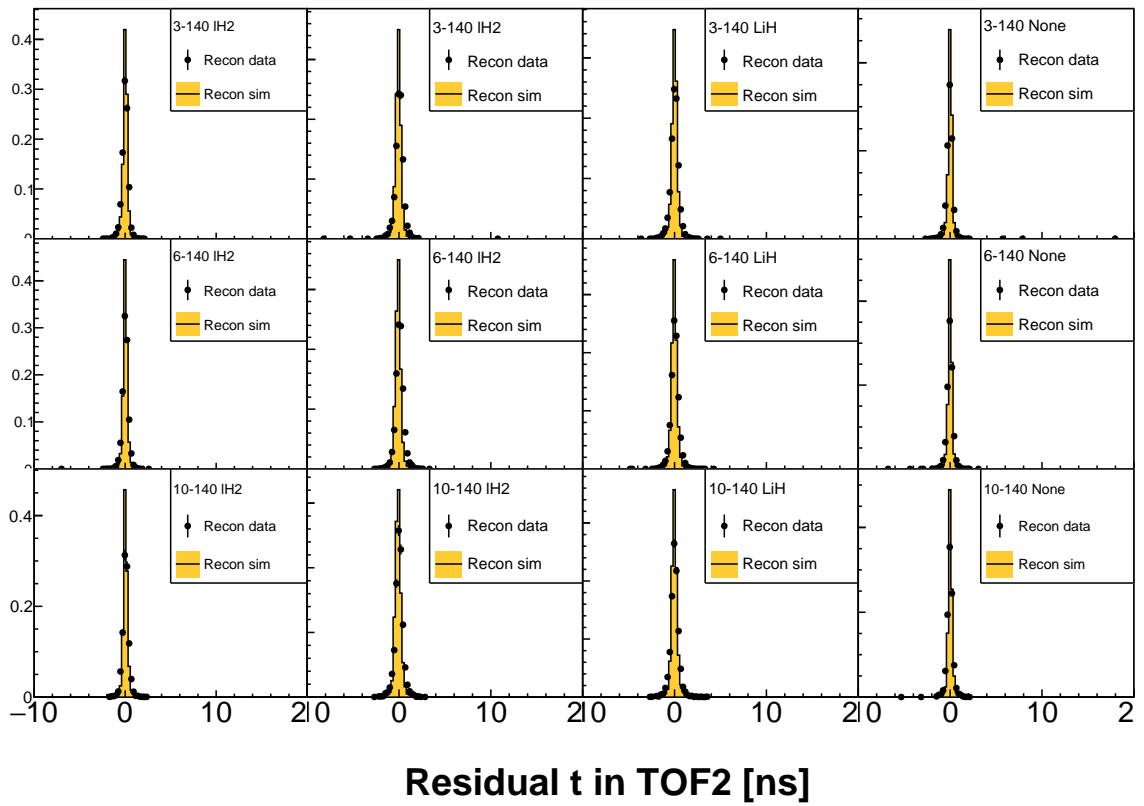


Figure 9: TOF2 time.

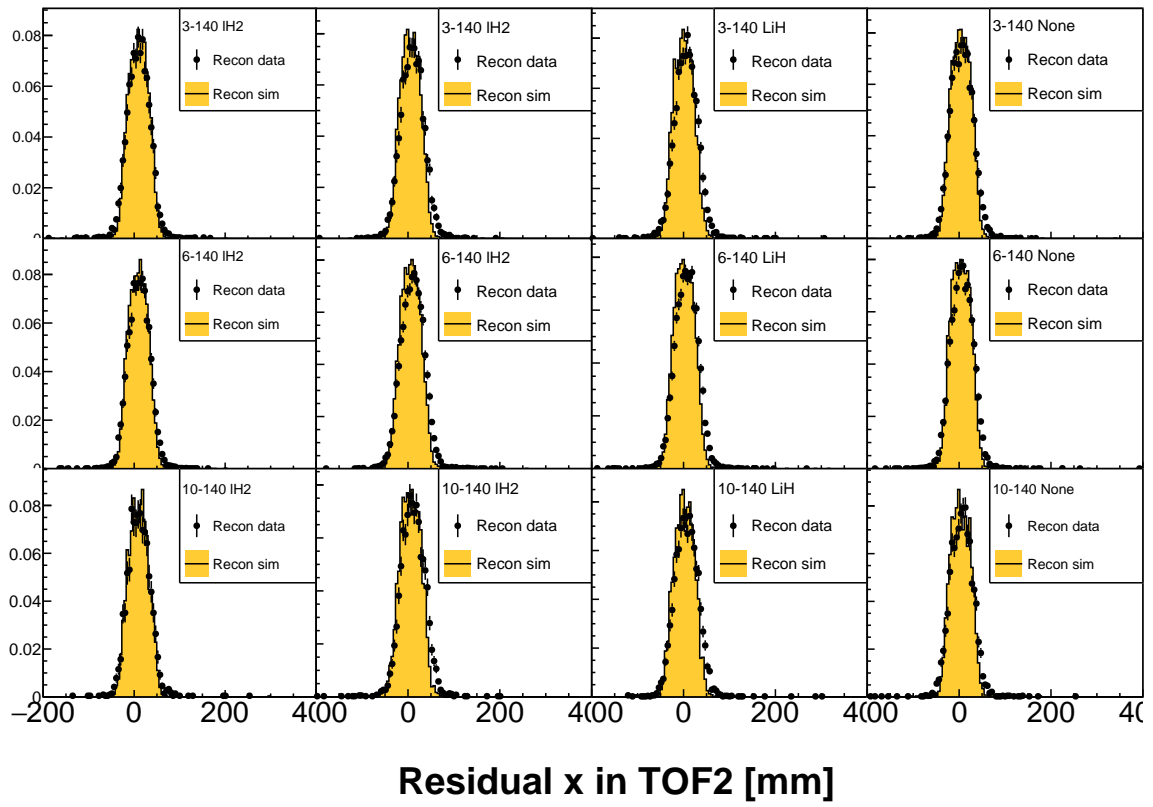


Figure 10: TOF2 x position.

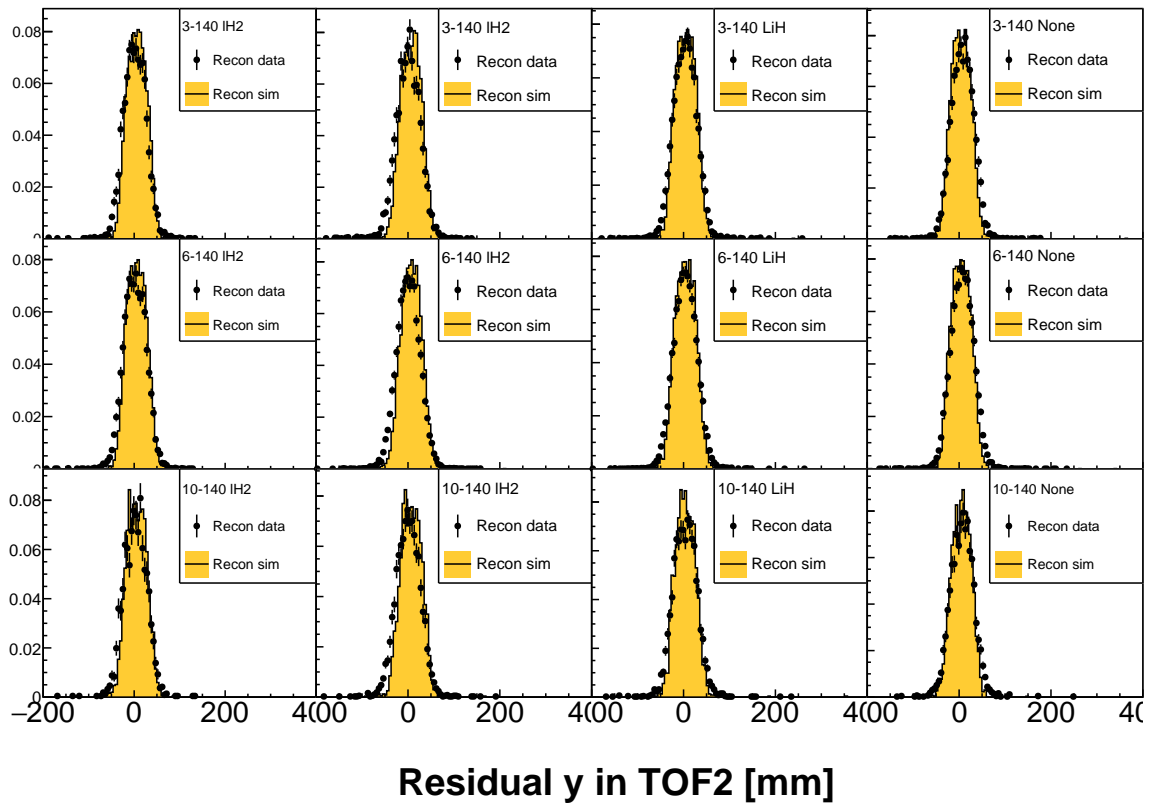


Figure 11: TOF2 y position.

References

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