Quick Comparison of Pixel Barrel Cosmic Data and MC

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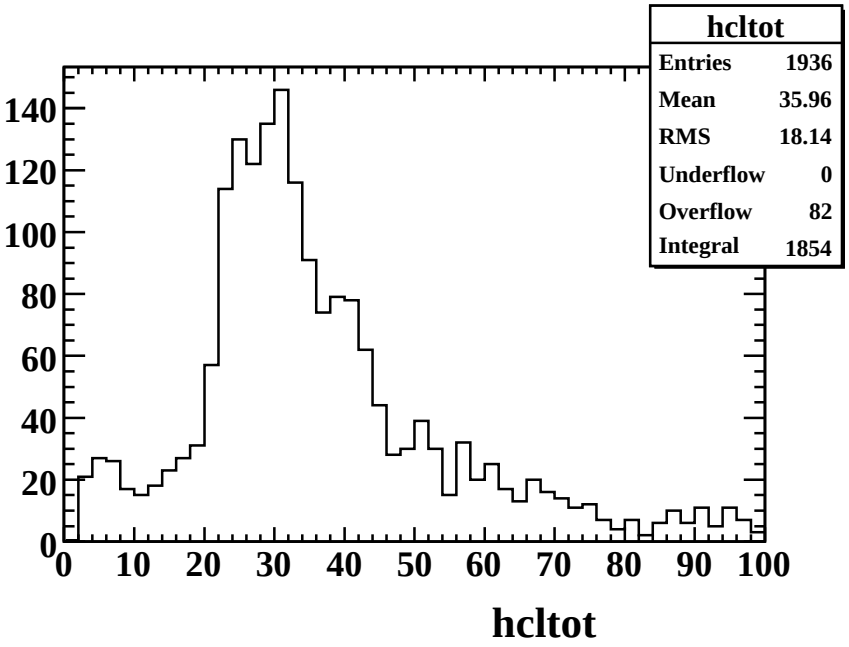
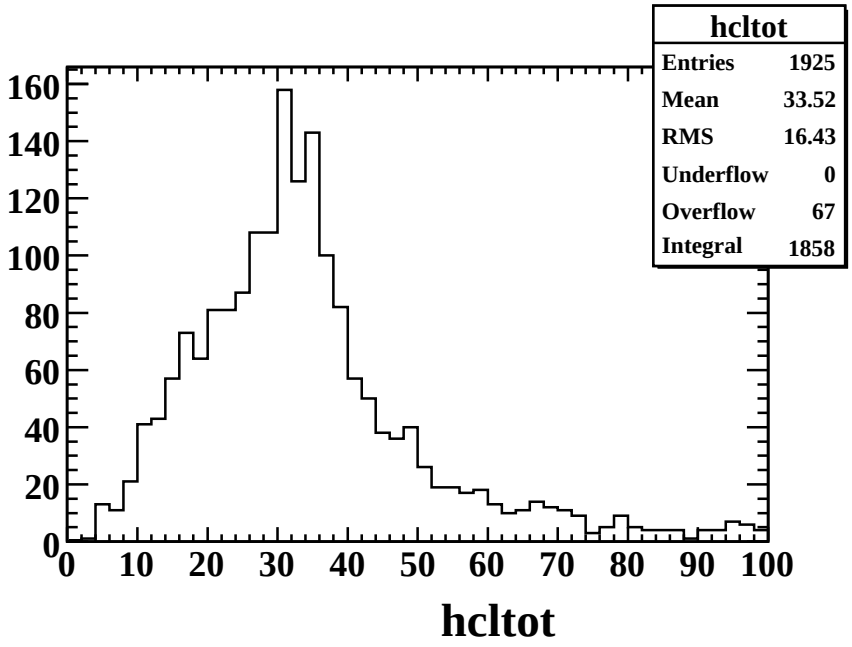
- Cosmic Data with CBNT from Max with runs(88463, 88470, 88565).
- Cosmic MC with CBNT from Lauren: TRT_Pix_30GeV_1000GeV_NF files.
- Selecting 3 or more good pixel hits with tot > 20
- Two far hits are on L2.
- Fit with two hits on L2 and compute the residuals on L1 and L2 (consistent check).
- The residuals in Data seem worse than MC.

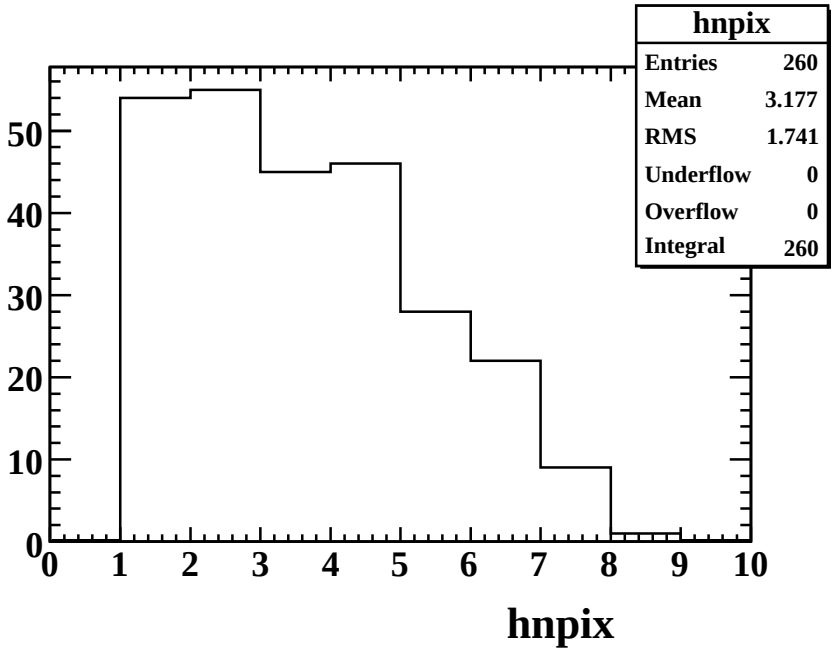
ToT Distributions on Tracks

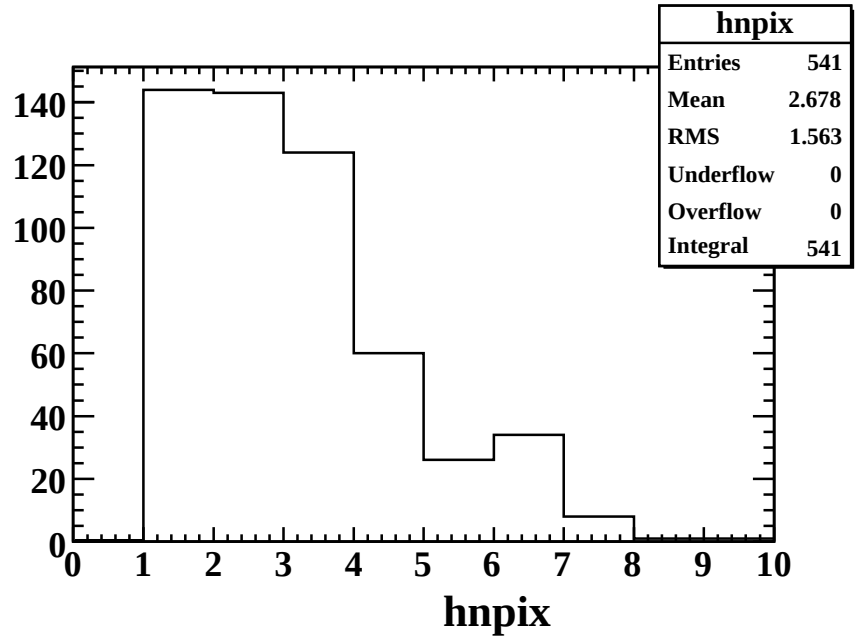




- Data on left and MC on right
- Both peak around 30, but the shape seems different

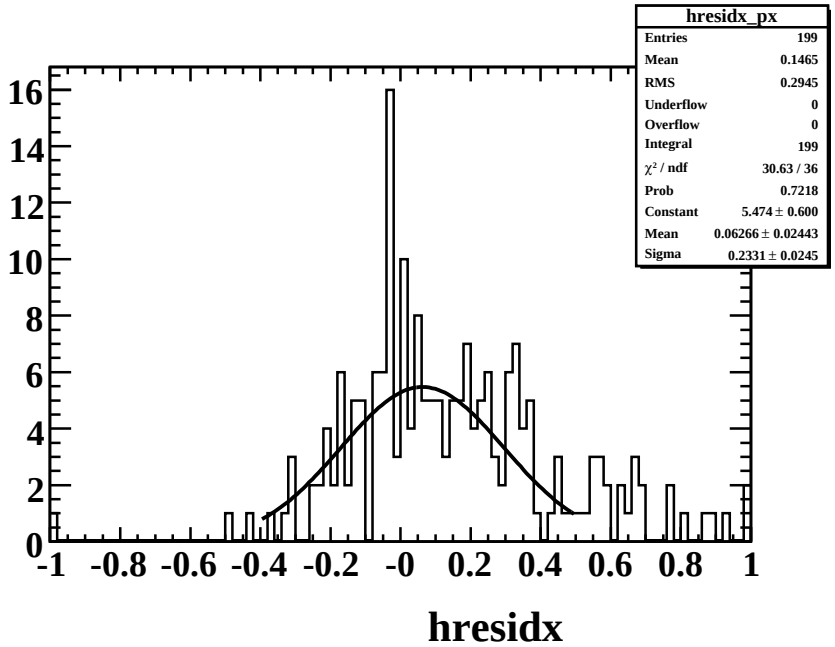
Number of Clusters on Track with ToT > 20

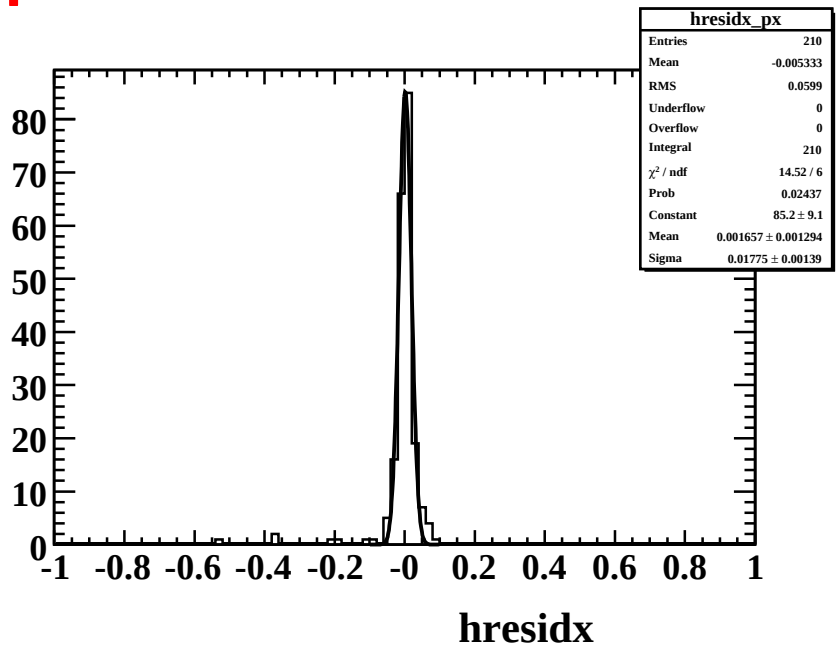




- Data (left) have a similar distribution as in MC (right)

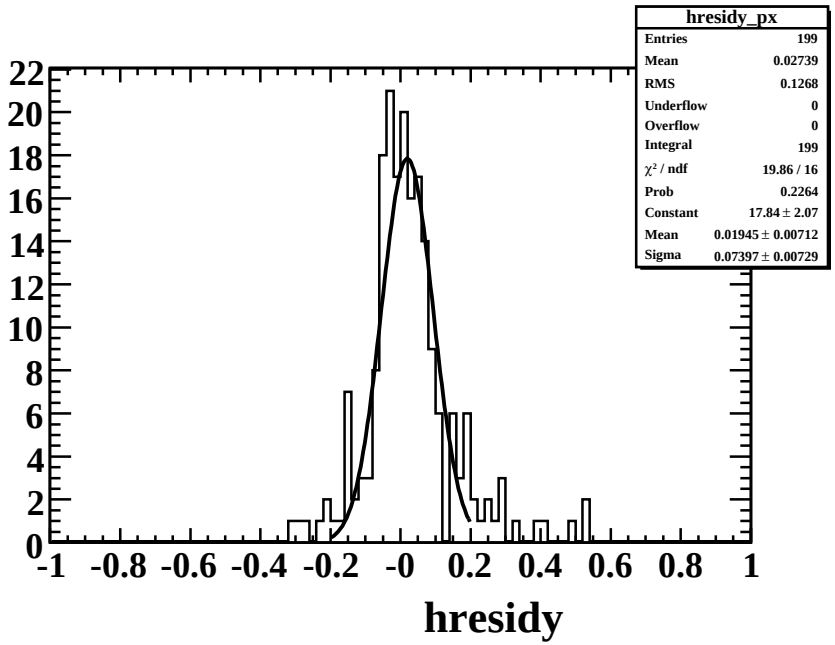
Residual X in L0, L1 respect to L2

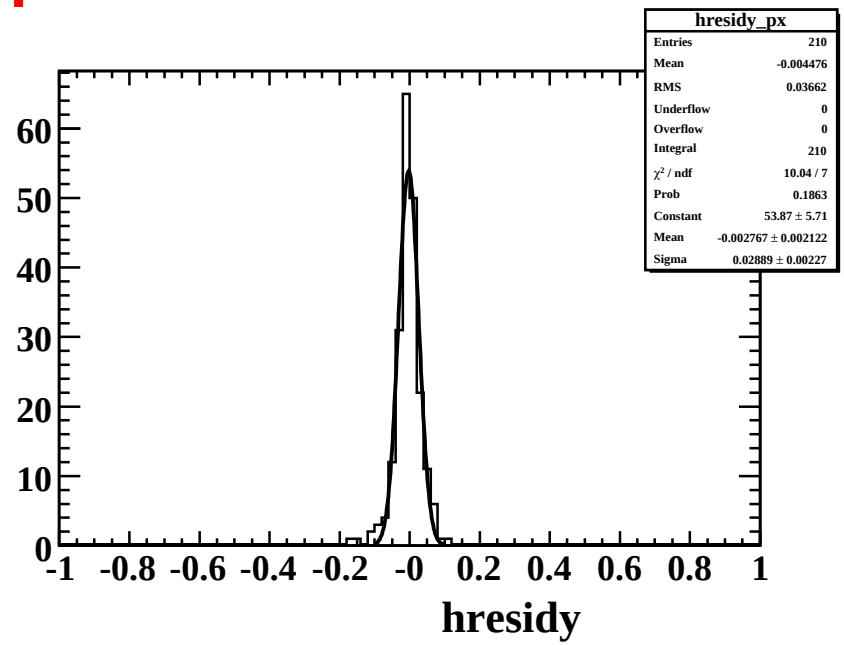




- Data (left) seem much wider than MC (right).

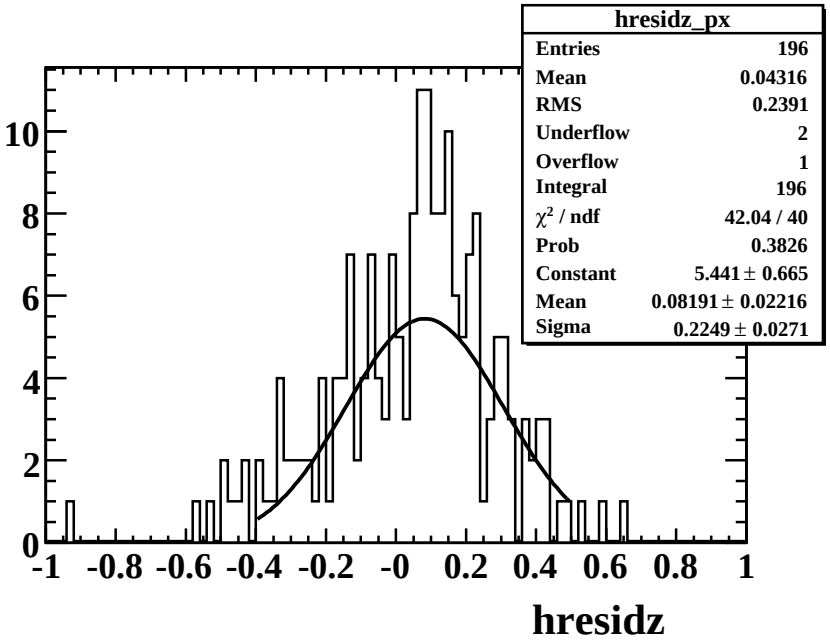
Residual Y in L0, L1 respect to L2

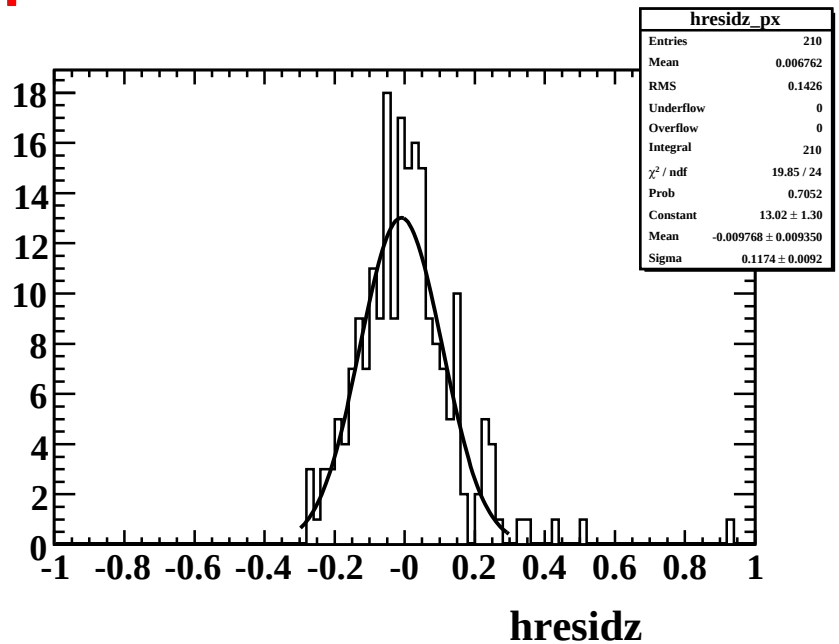




- Data (left) seem much wider than MC (right).

Residual Z in L0, L1 respect to L2





- Data (left) seem much wider than MC (right).

Conclusion

- The quality of cosmic data look good, more studies
- However, the initial resolution of pixel detector seem worse than expected
- Studies in terms of noise level, hit and cluster efficiencies , and resolution
- We have two more students this fall: Zack and Geoffrey.