Calo matching issue

In J/psi mass reconstruction analysis

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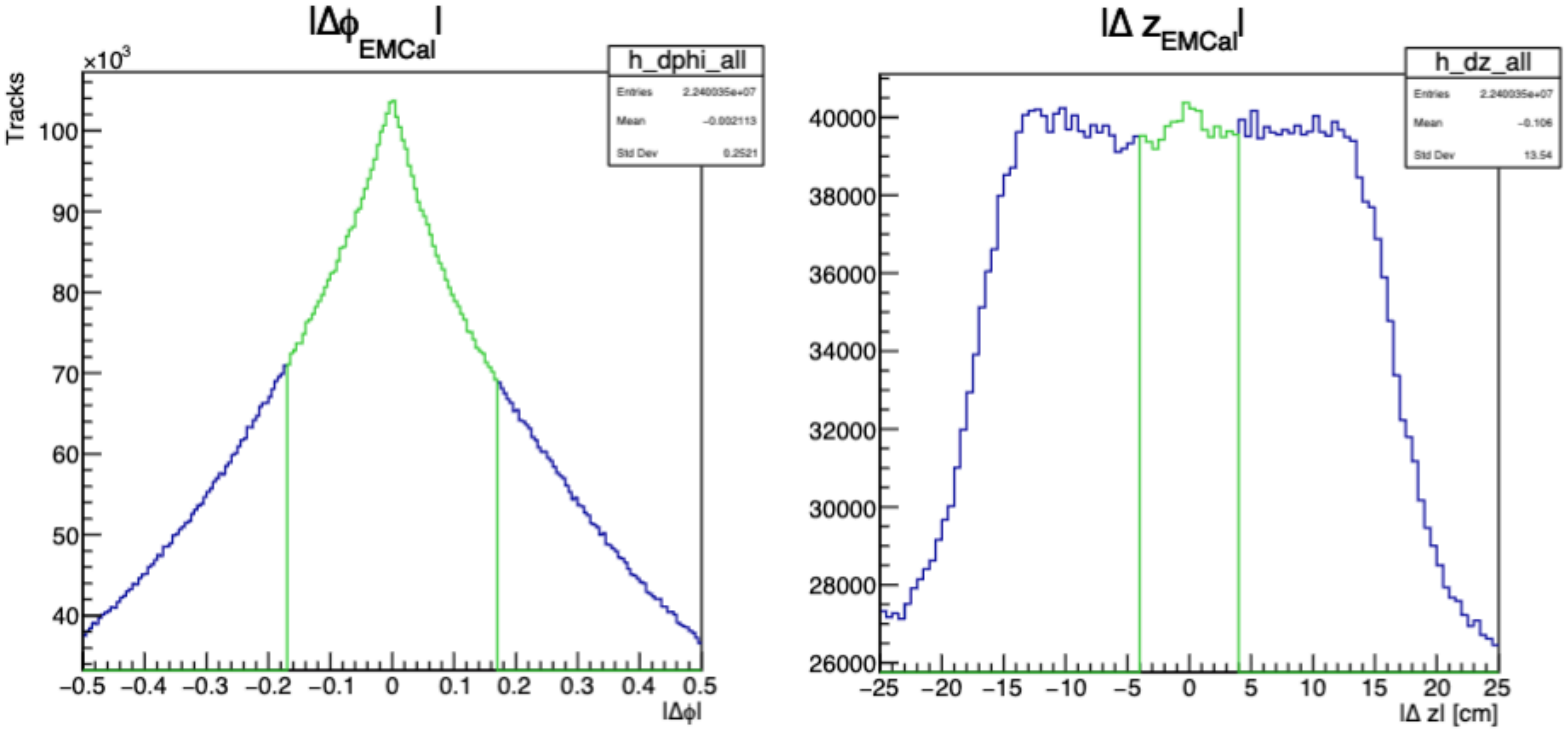
Status

- Mass reconstruction with run24 p+p with DST_CALOFITTING files
  - calo matching is not going well…
- Check why ↑ and try to fix it

Run53879, p+p
B-on, 5million events

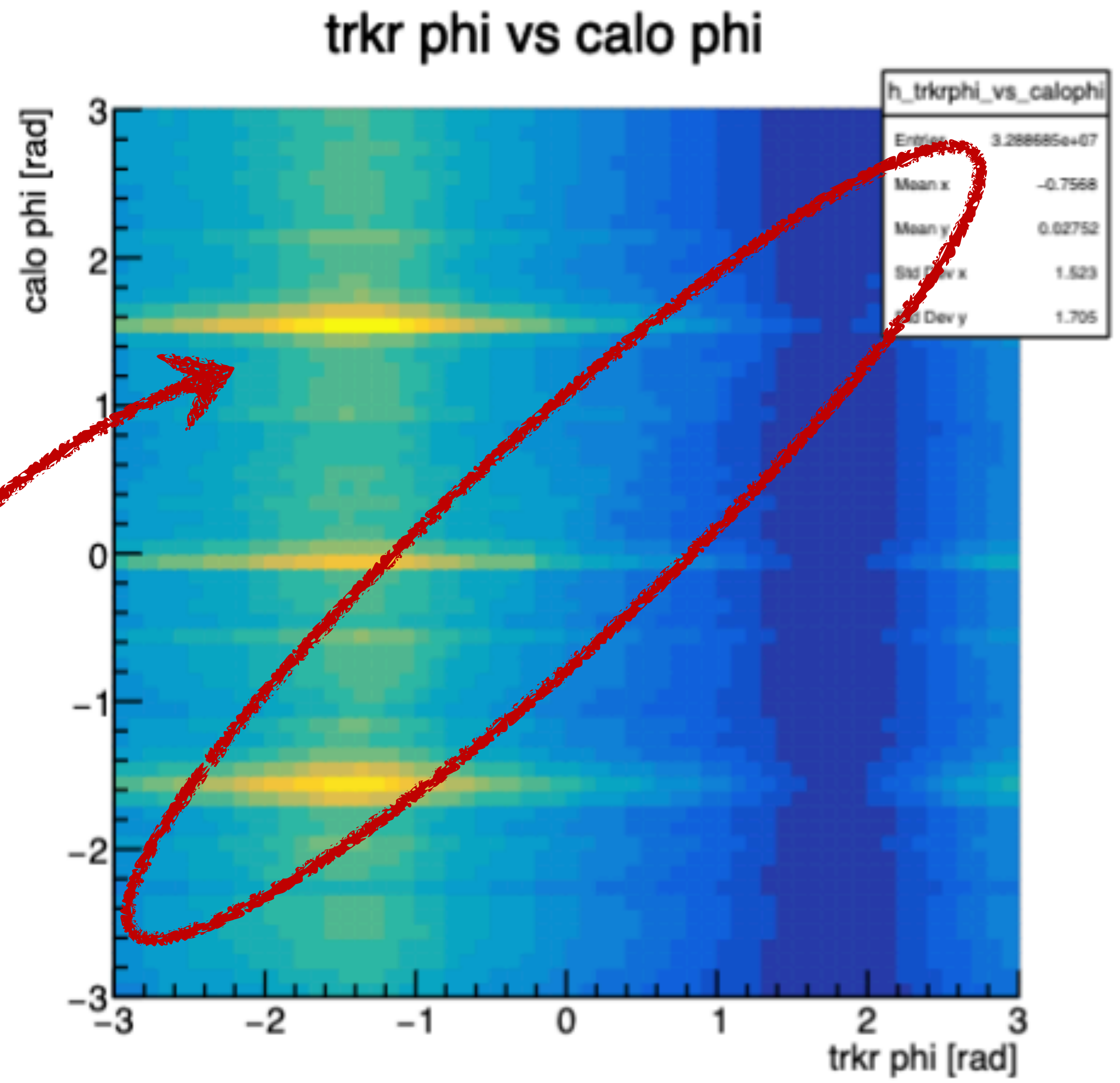


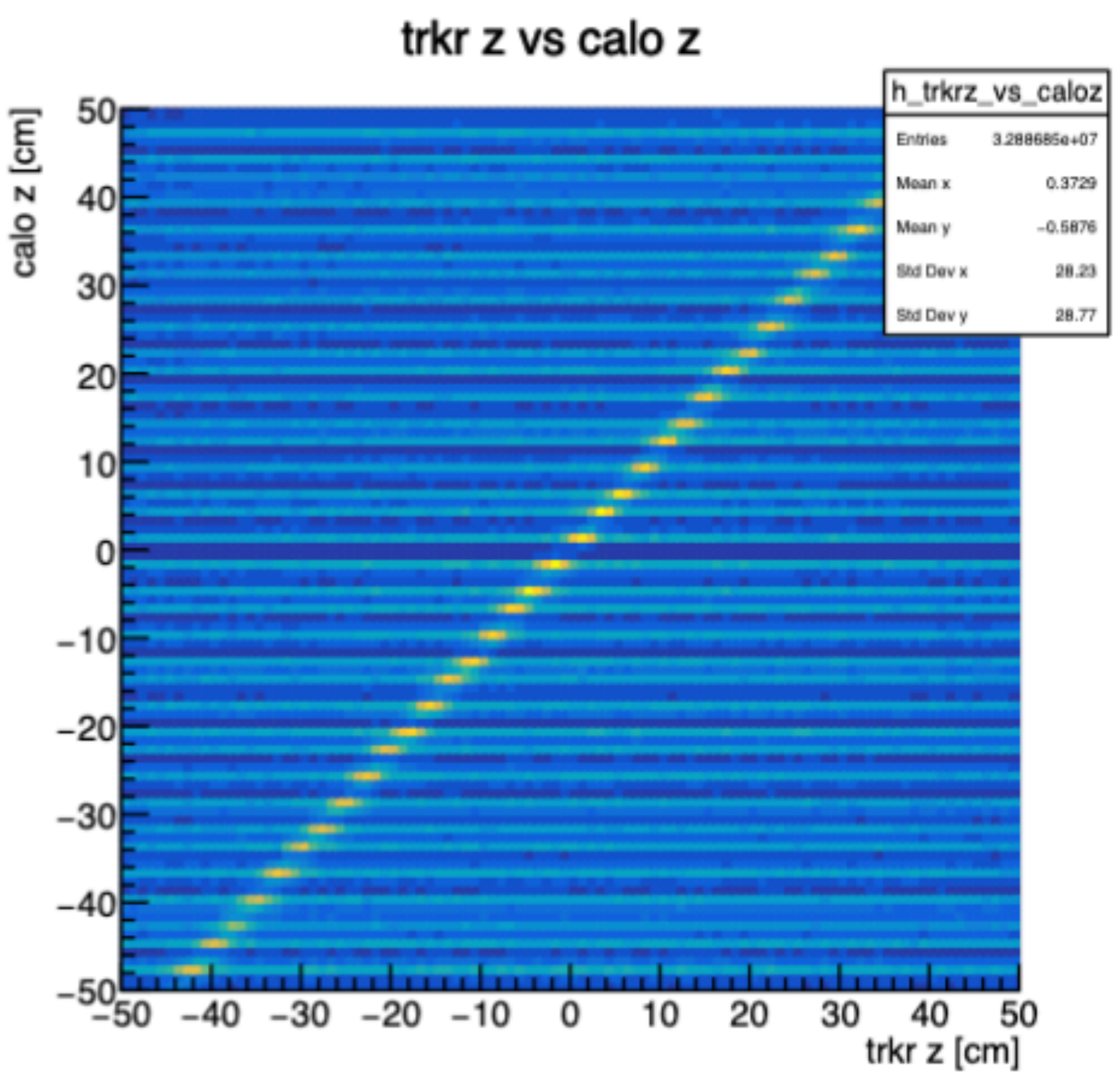
trkr phi VS calo phi, trkr z VS calo z (DST_CALOFITTING)

Run53879, p+p
B-on, 1million events

- new calo dst (DST_CALOFITTING)
- These plots are after calo matching
  - Matching = trkr projection point with the closest dphi calo cluster (without dz info)
- trkr phi vs calo phi distribution has a weak correlation
- trkr z vs calo z distribution has a clear correlation(😮‍💨), but the slope does not seem to be 1…

BG?

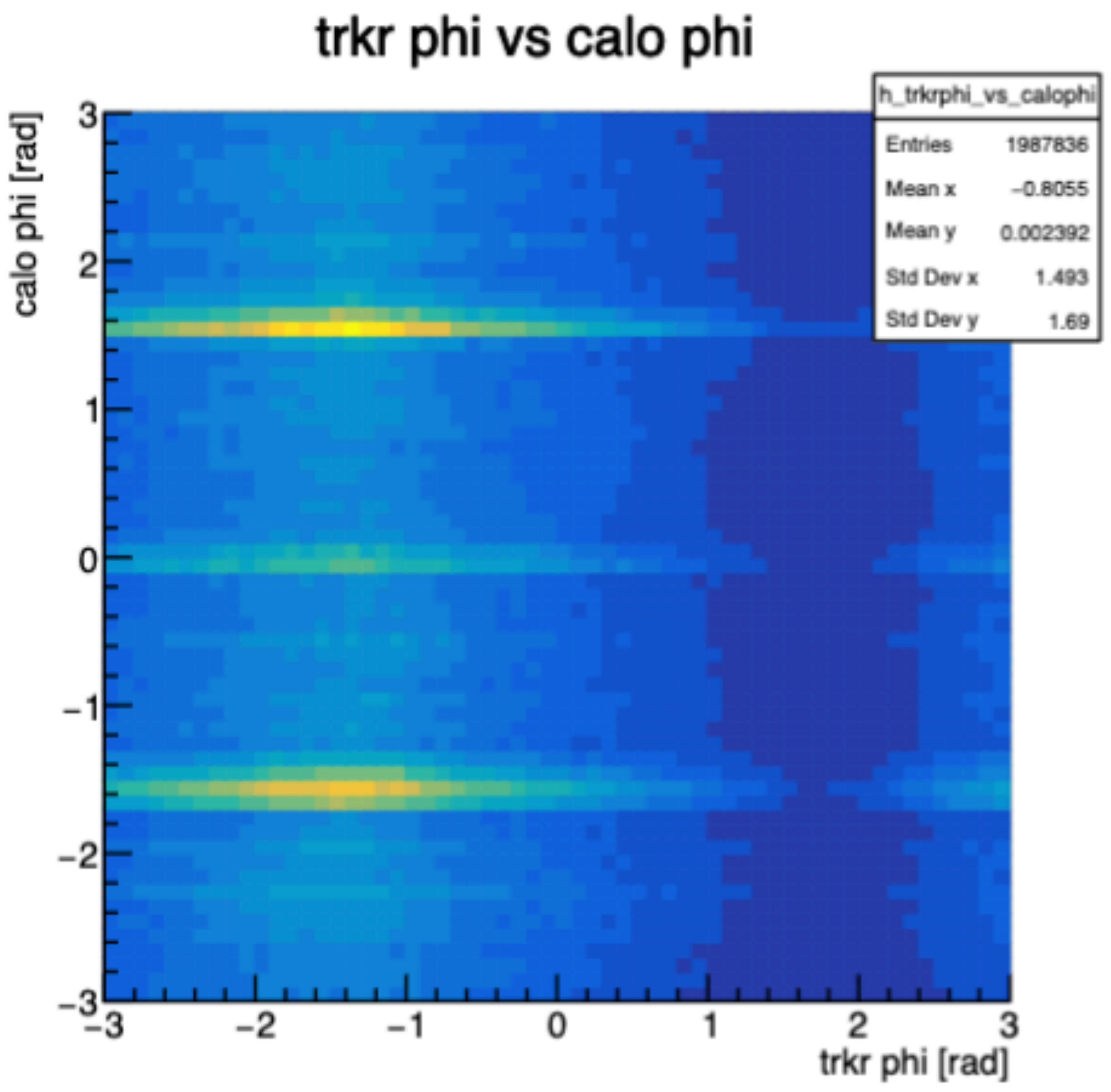


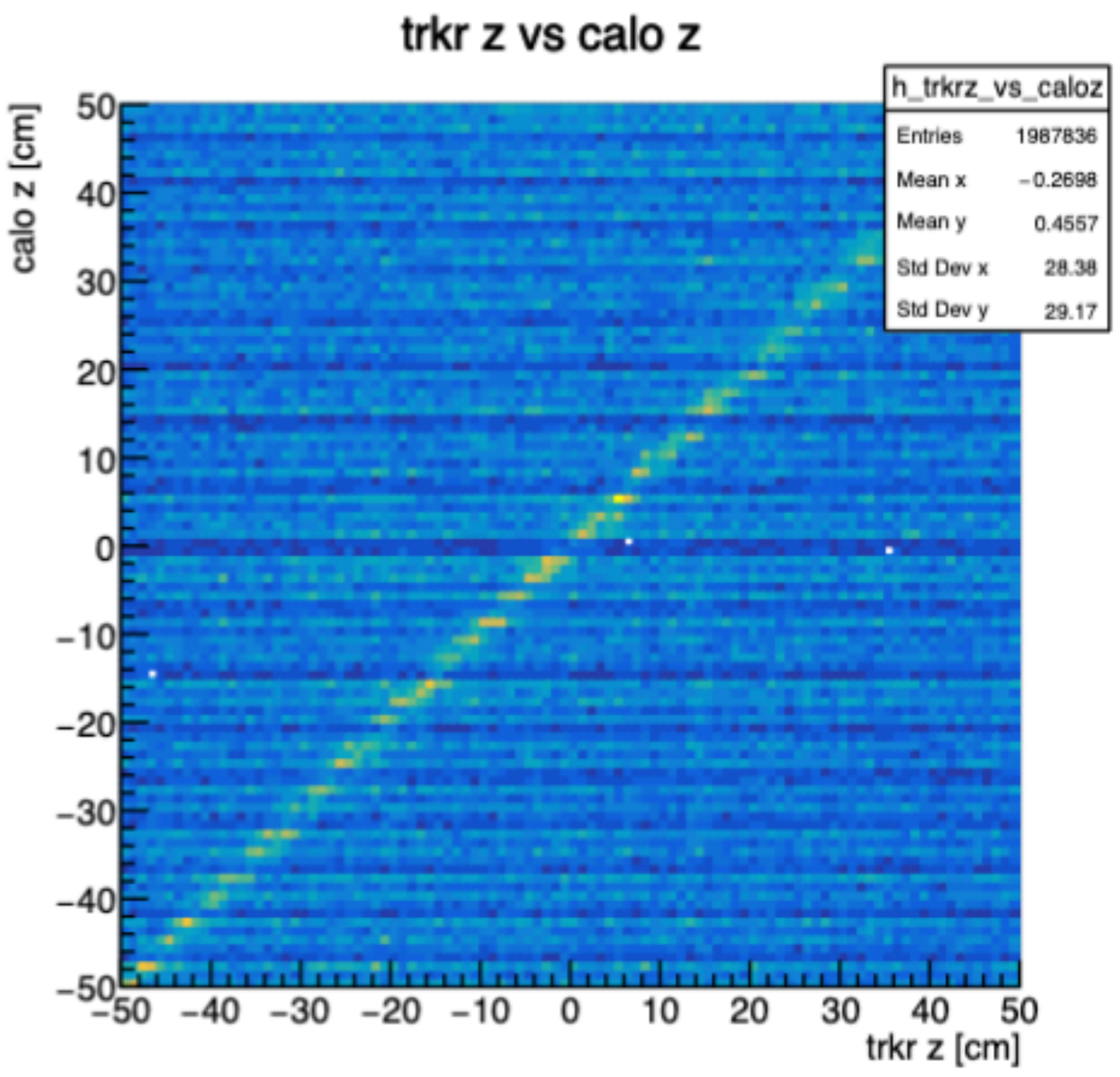


trkr phi VS calo phi, trkr z VS calo z (DST_CALO, for comparing)

Run53879, p+p
B-on, 50k events

- old calo dst (DST_CALO, these files were already deleted)
- trkr z vs calo z distribution has a clear correlation, slope seems to be 1

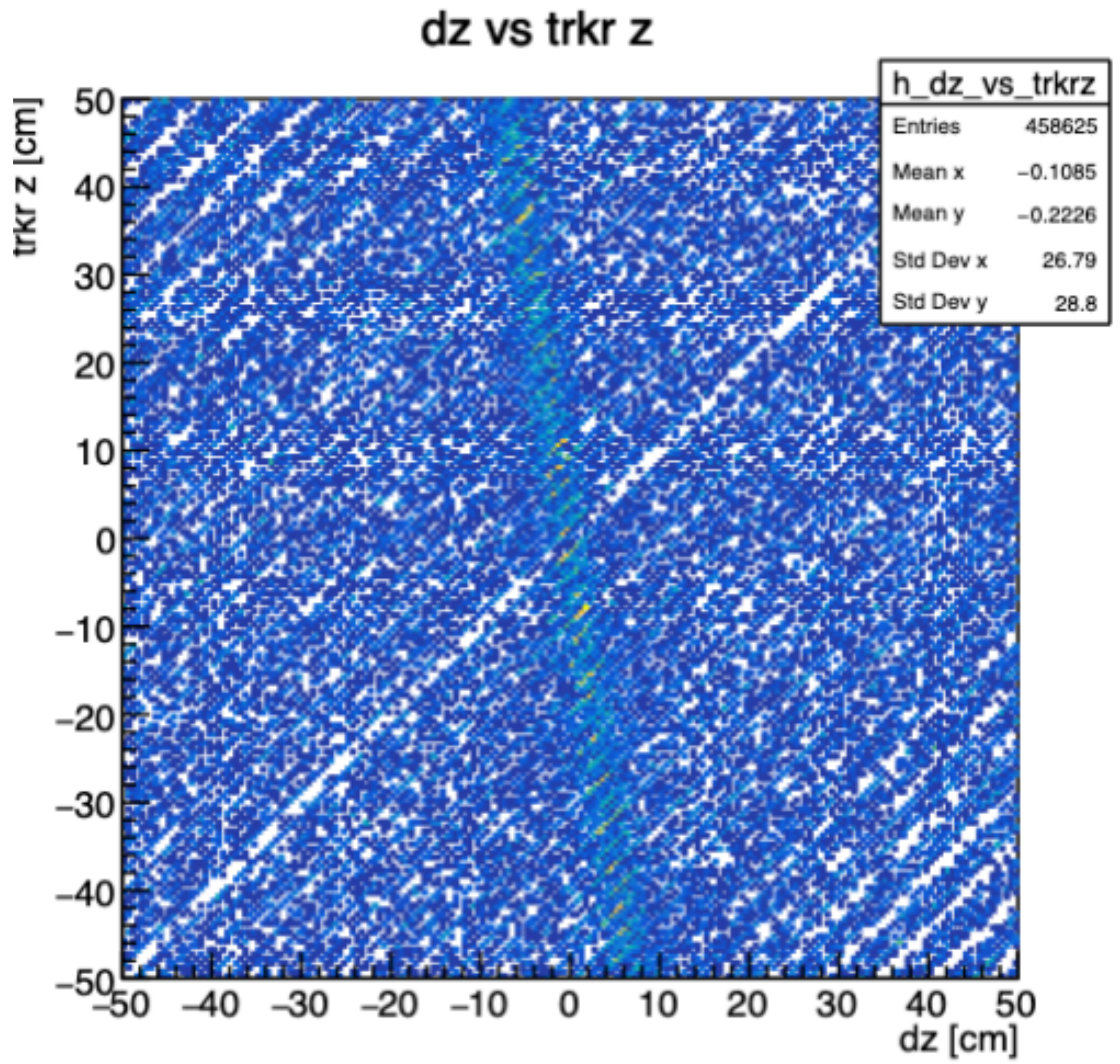


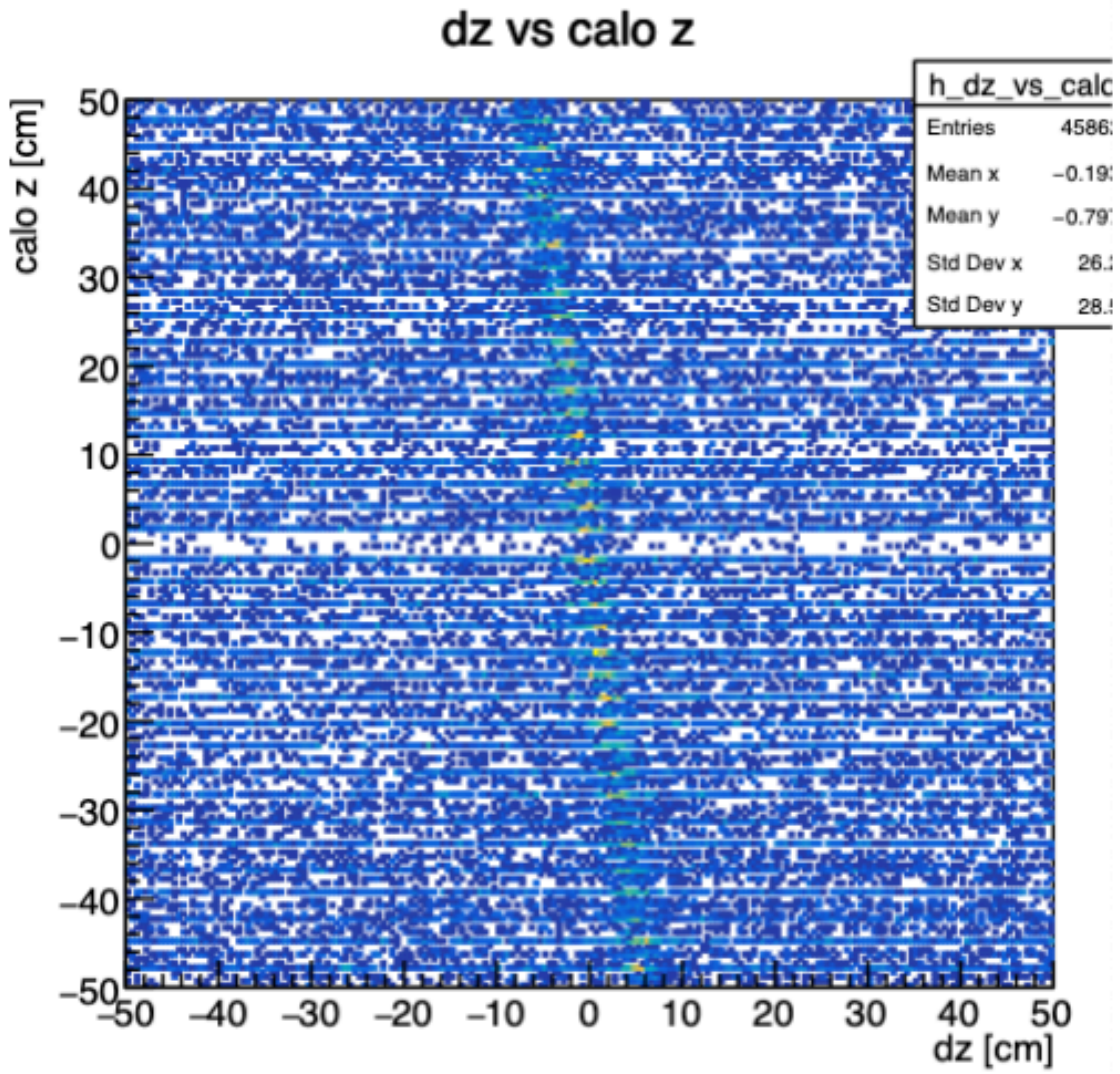


dz VS trkrz, dz vs calo z (DST_CALOFITTING)

Run53879, p+p
B-on, 100k events

- new calo dat (DST_CALOFITTING)
- dz(trkrz - matching calo z) VS trkr z, dz VS matching calo z
- Both have a clear coloration, but It's tilted

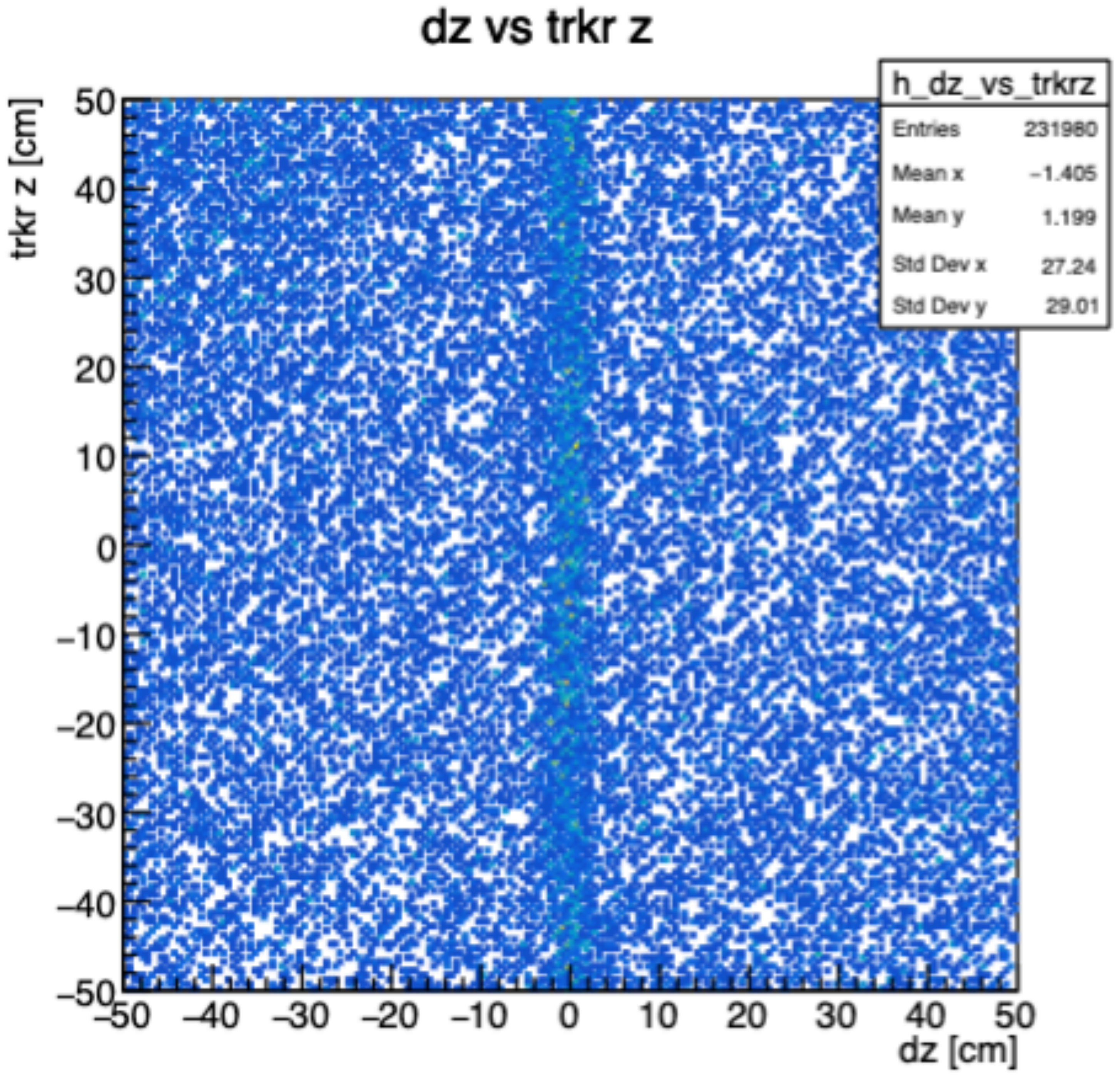


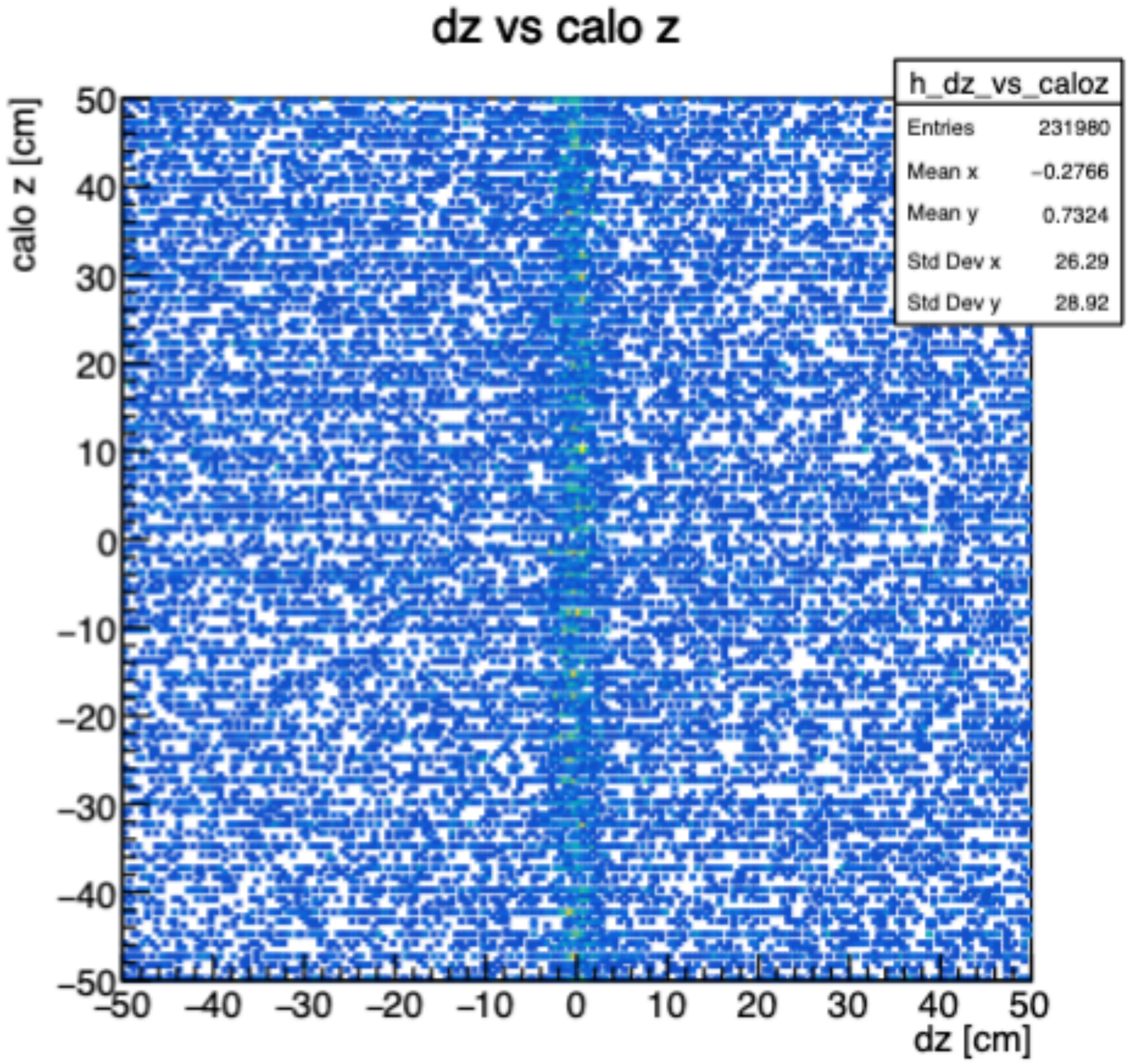


dz VS trkrz, dz vs calo z (DST_CALO, for comparing)

Run53879, p+p
B-on, 50k events

- old calo dat (DST_CALO, these files were already deleted)
- Both has a clear straight correlation at dz = 0

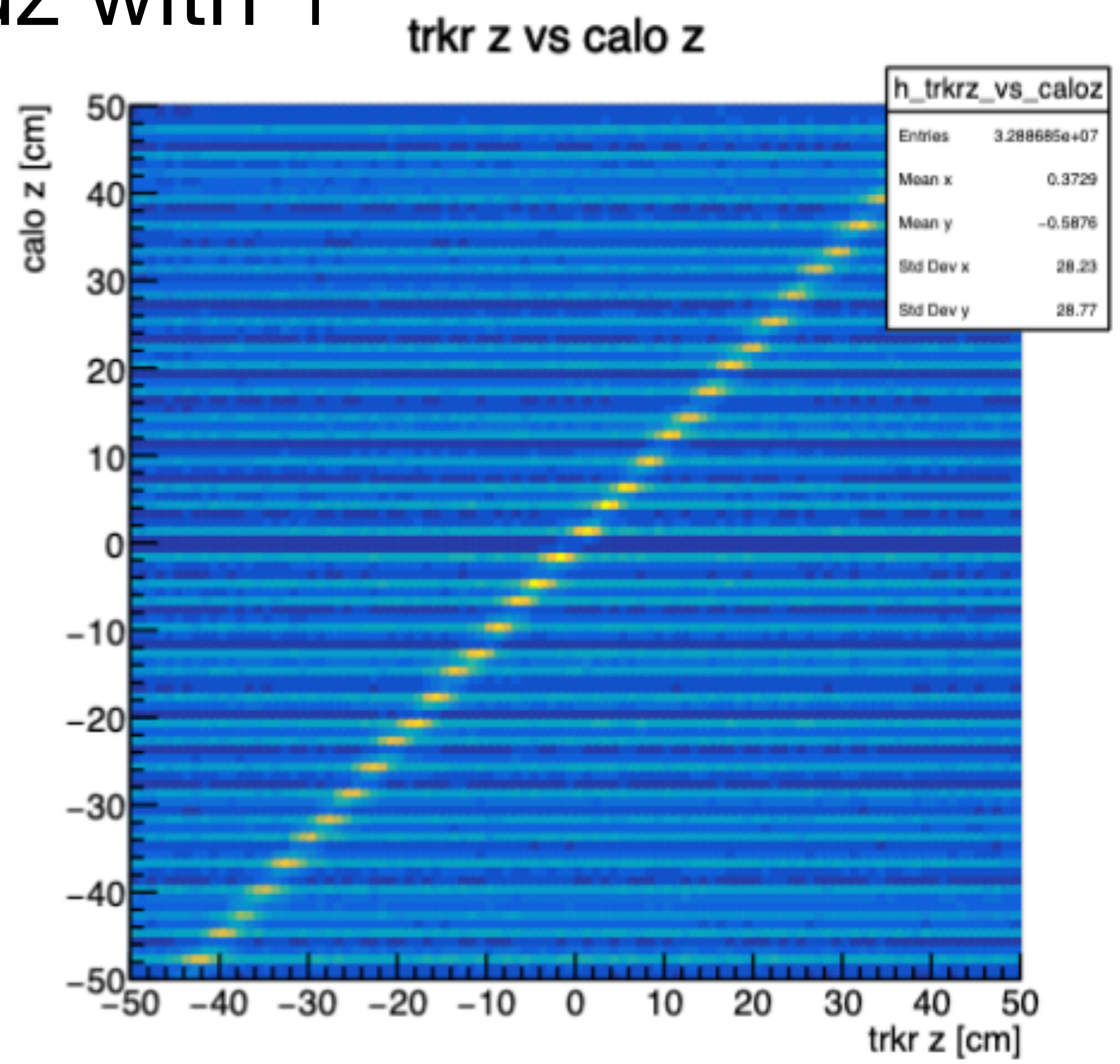


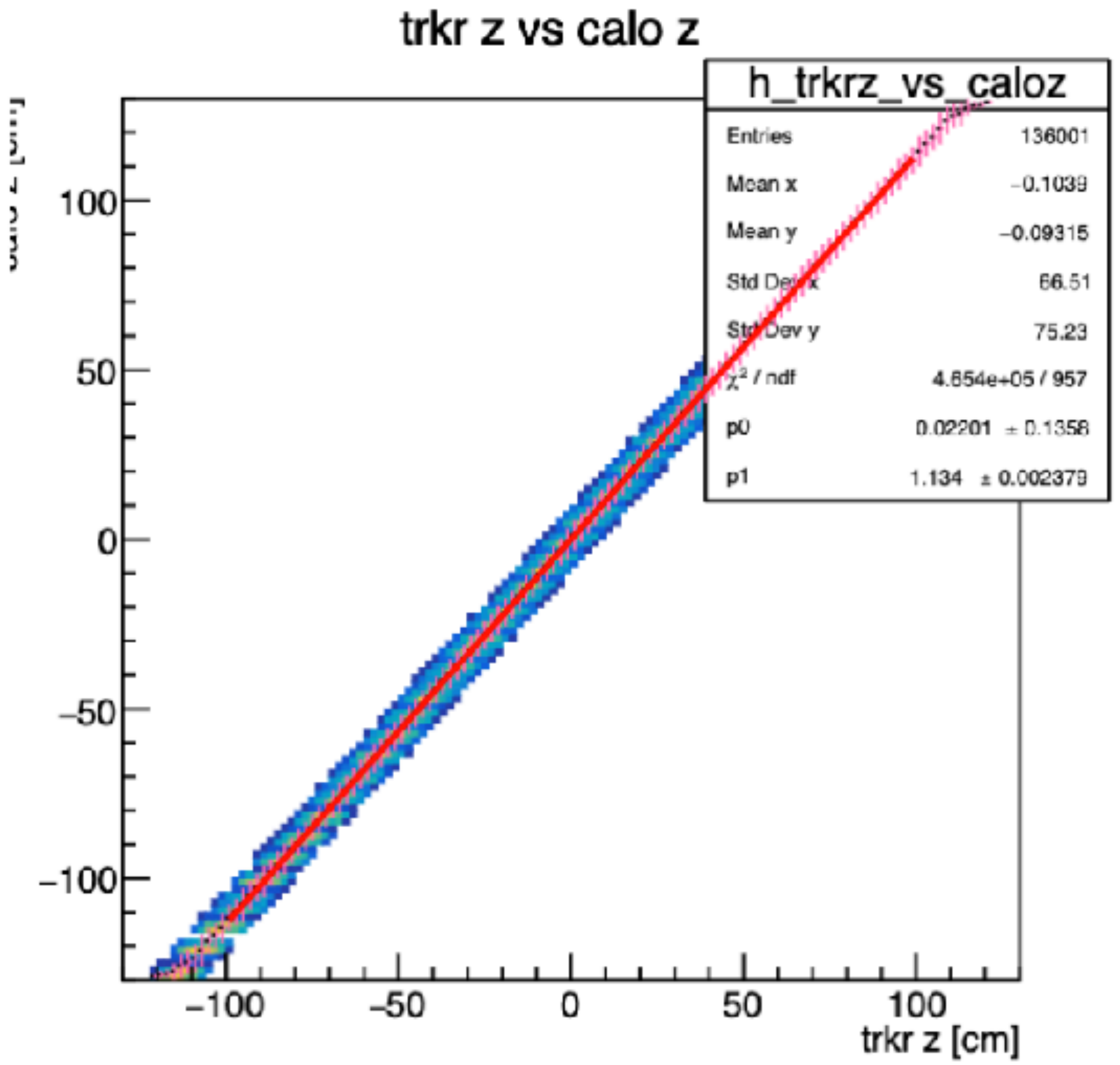


Slope of correlation in trkr z vs calo z

Run53879, p+p
B-on, 10k events

- Check the slope of correlation in trkr z vs calo z distribution (run24 p+p, with DST_CALOFITTING)
- Fitting with the data only around correlation,
  Fitting function is $y = 1.134x + 0.02 \;\; (y = calo_z, x = trkr_z)$
- Next step…recalculate dz with ↑





To do

- Recalculate dz in consideration of slope of the correlation in trkr z VS calo z
- Increase statistics and reconstruct the Mass…