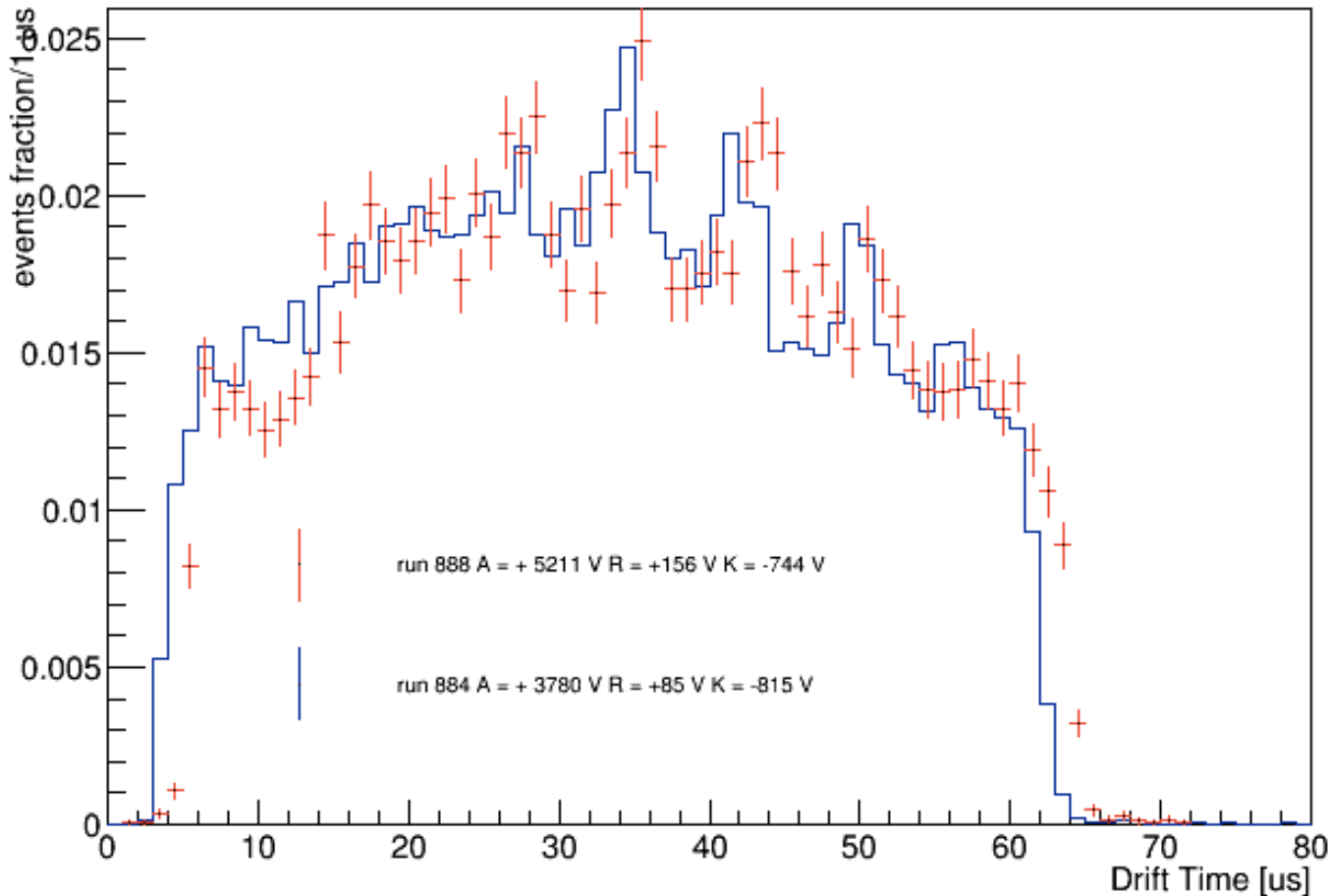


Fields and S2/S1 – updates from Naples Run

MR 4 Feb 2019

Drift Time S2-S1 from runs with different Anode setting with same Edrift (according to COMSOL)

(clusters[1].cdf_time-clusters[0].cdf_time)*2/1000 (clusters[0].f90>0.2 && clusters[0].charge>500 && clusters[0].charge<750 && clusters[1].f90<0.2)

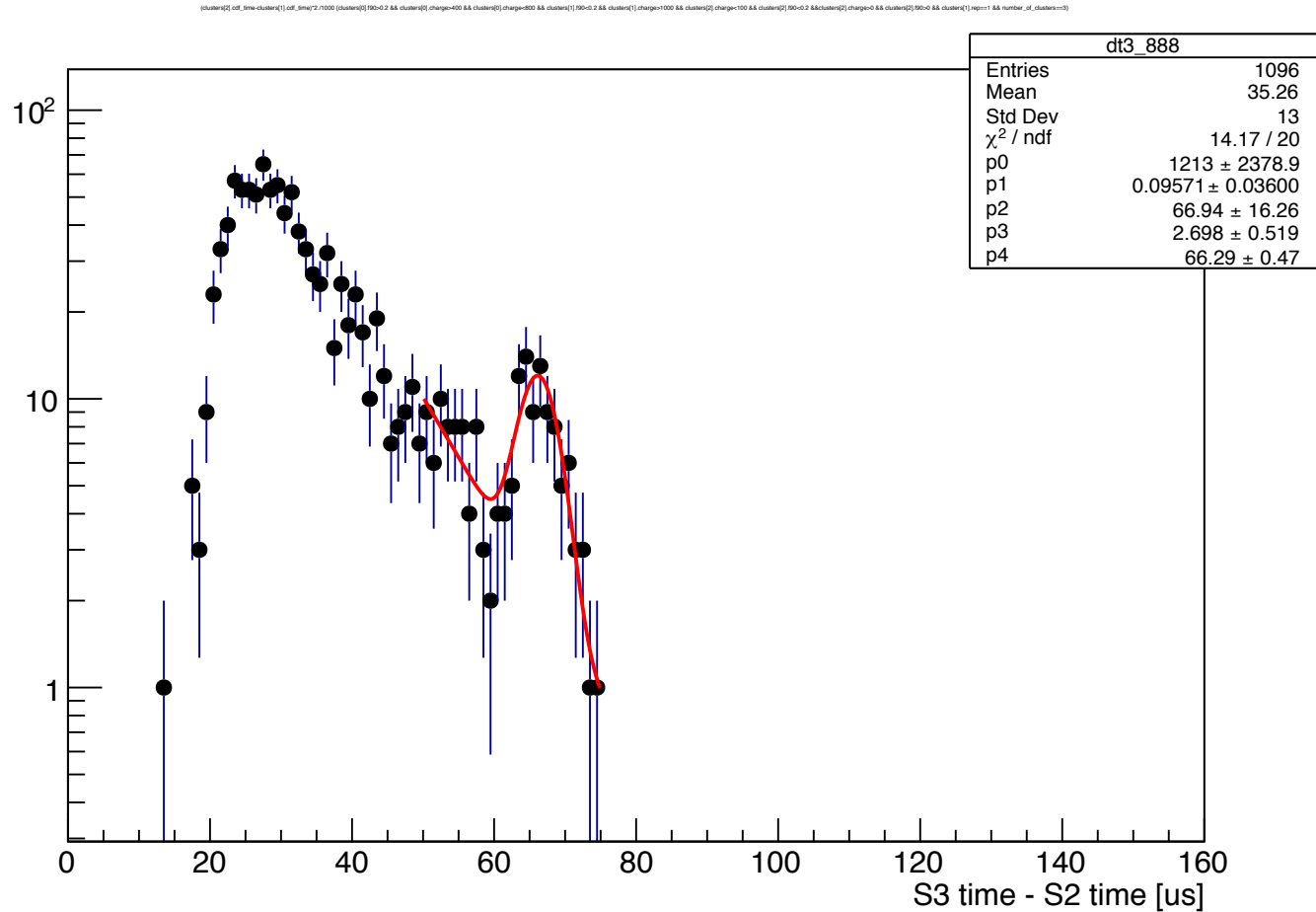


No correction yet for S2 S1 risetime difference! Suggestions on how to do it?

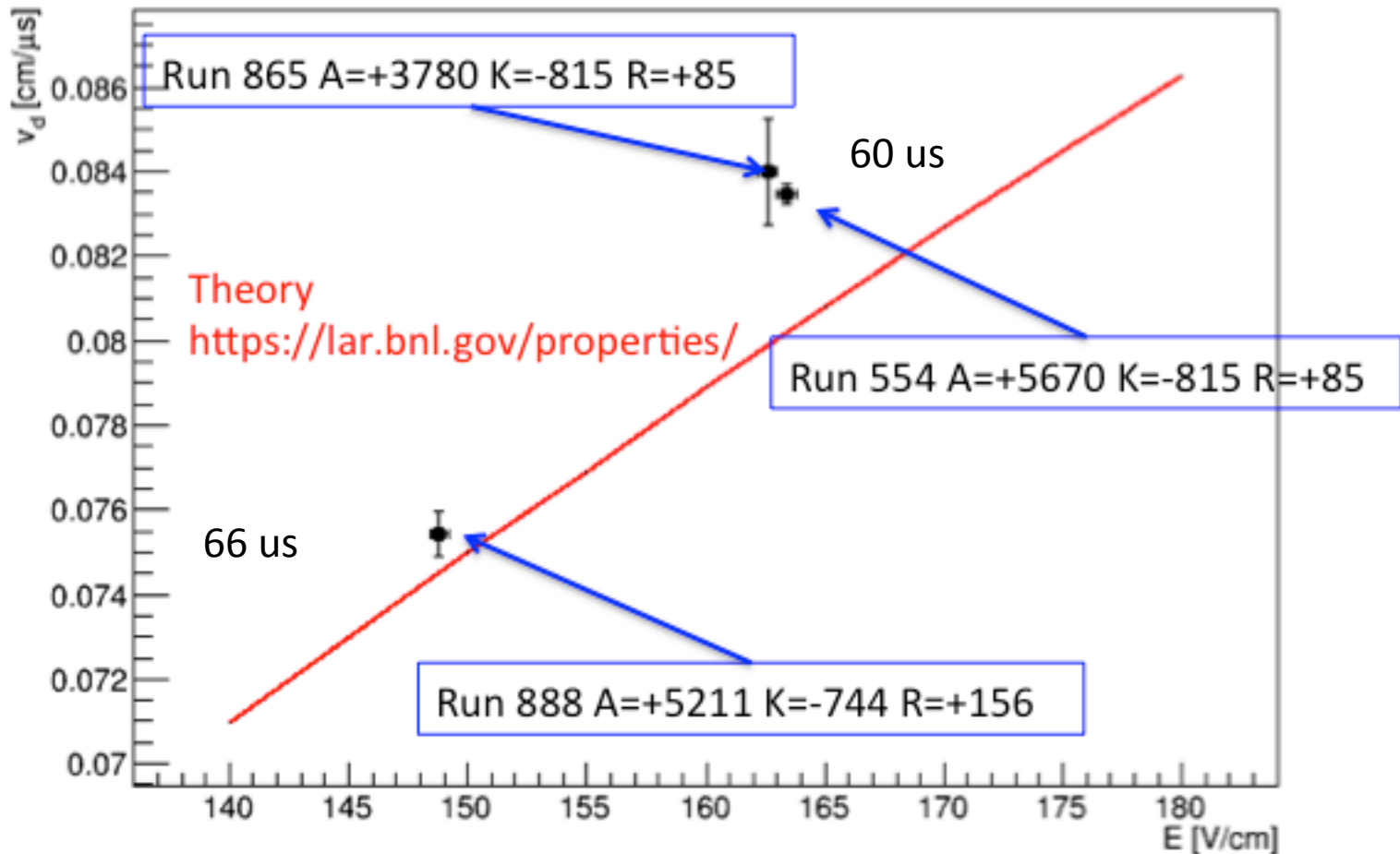
GeV Analysis Meeting 24/7/2019



Trdirft from S3 echo

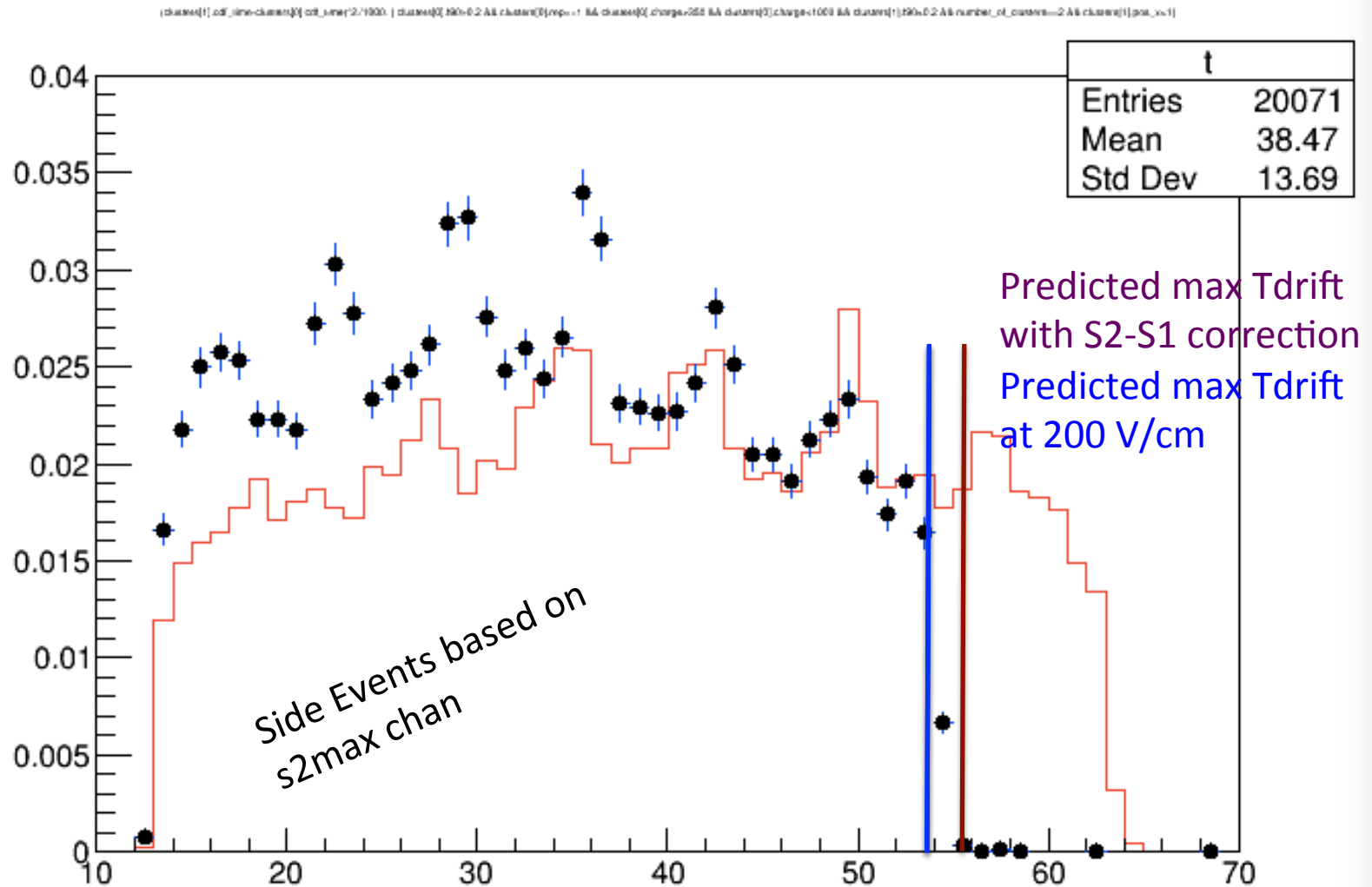


Average v_{drift} vs E_{field}



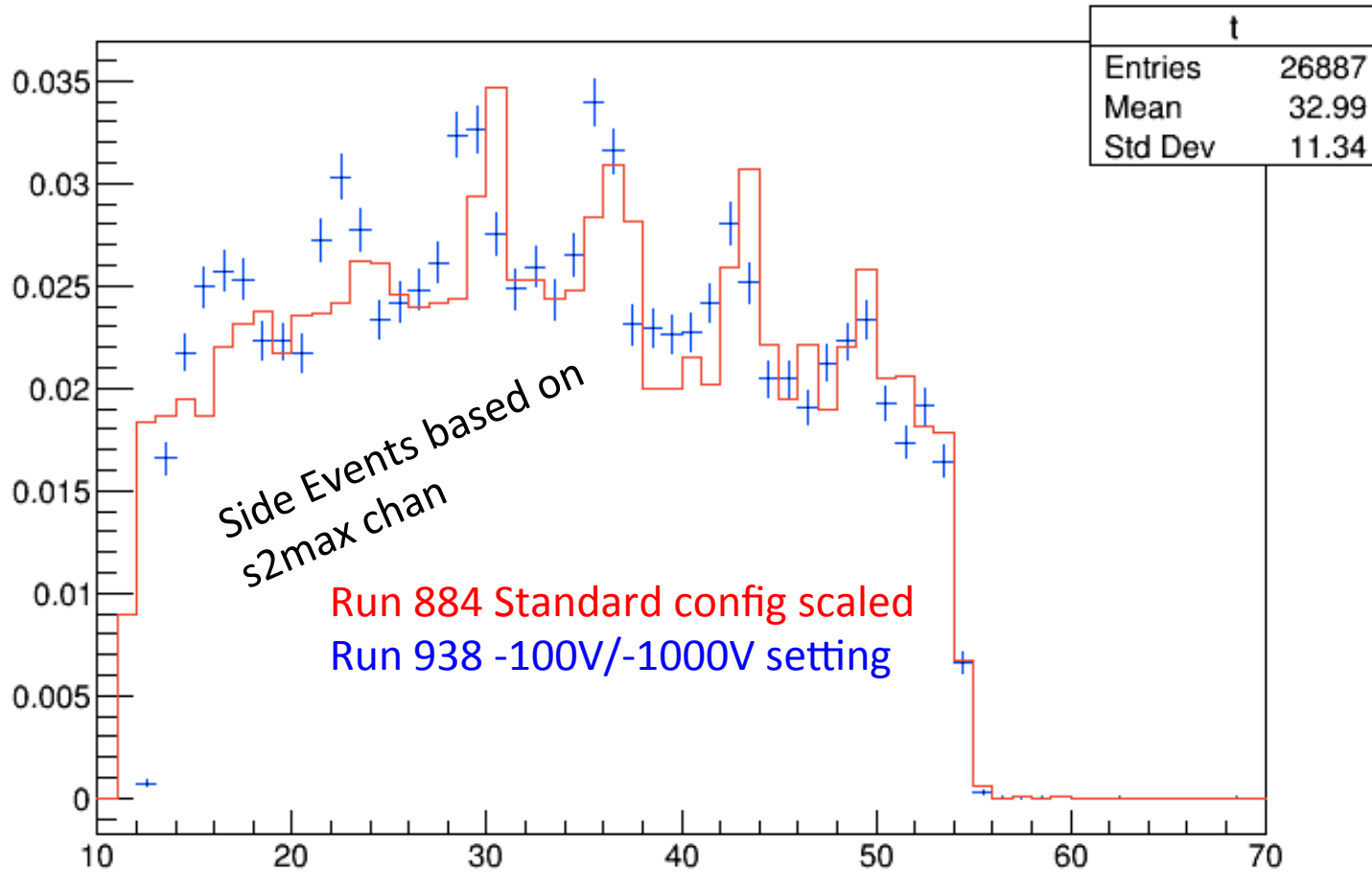
- E_{field} values obtained as $K[\text{V}]/d[\text{cm}]$
- X values for Run865 and Run 554 displaced by ± 2 V

Tdrift comparison **standard** vs **-100/1000 V** setting



Tdrift comparison side only standard scaled by 54/62

(cluster){1} col_line=cluster{0} col_line=2/1900 (cluster){0} 56=0.2 && cluster{0} n=1 && cluster{0} charge=350 && cluster{0} charge=100 && cluster{0} 56=0.2 && number_of_clusters=2 && cluster{0} pcc_u=6

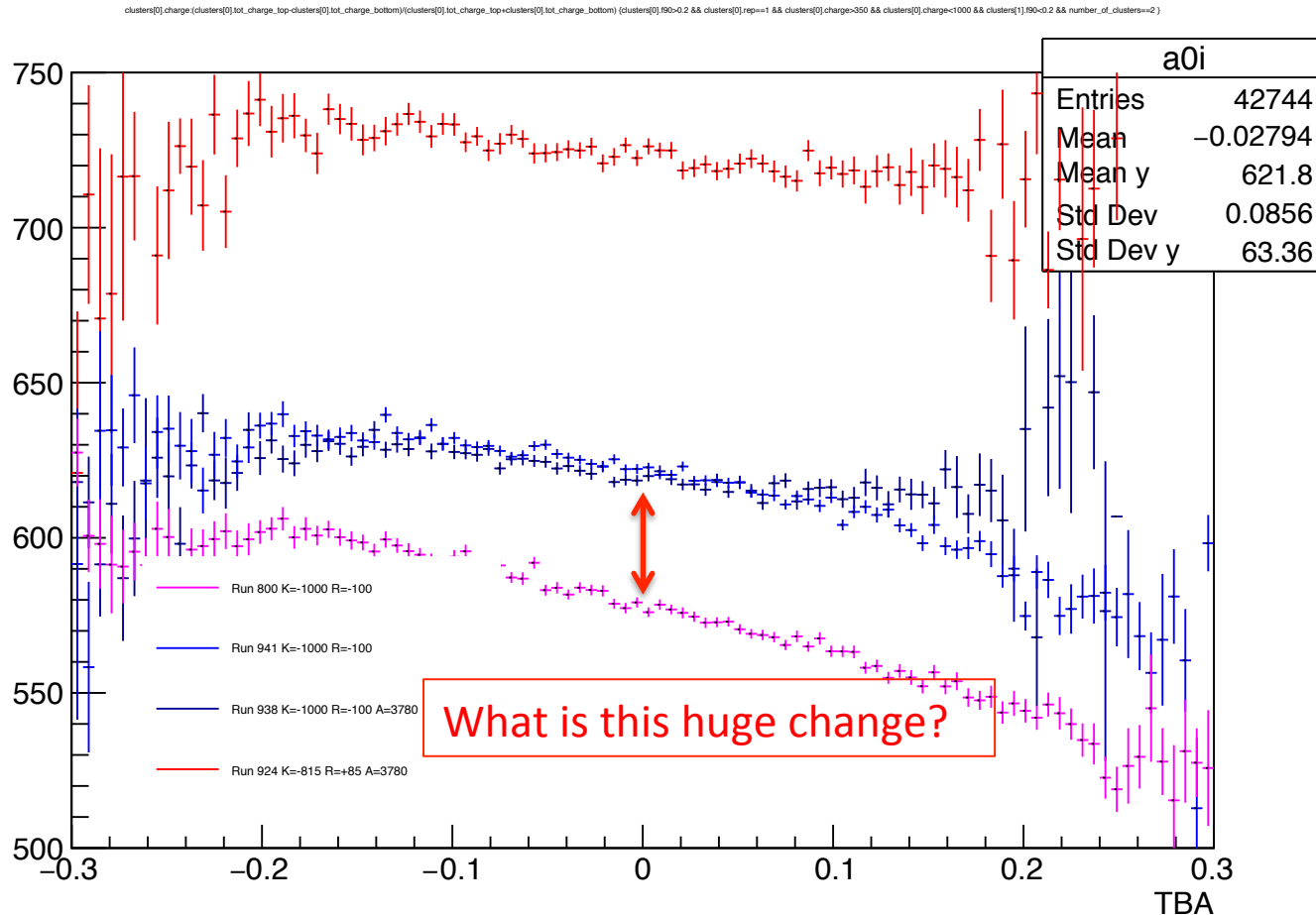


Some evidence of non uniformity of drift velocity along Z.

More statistics would be helpful

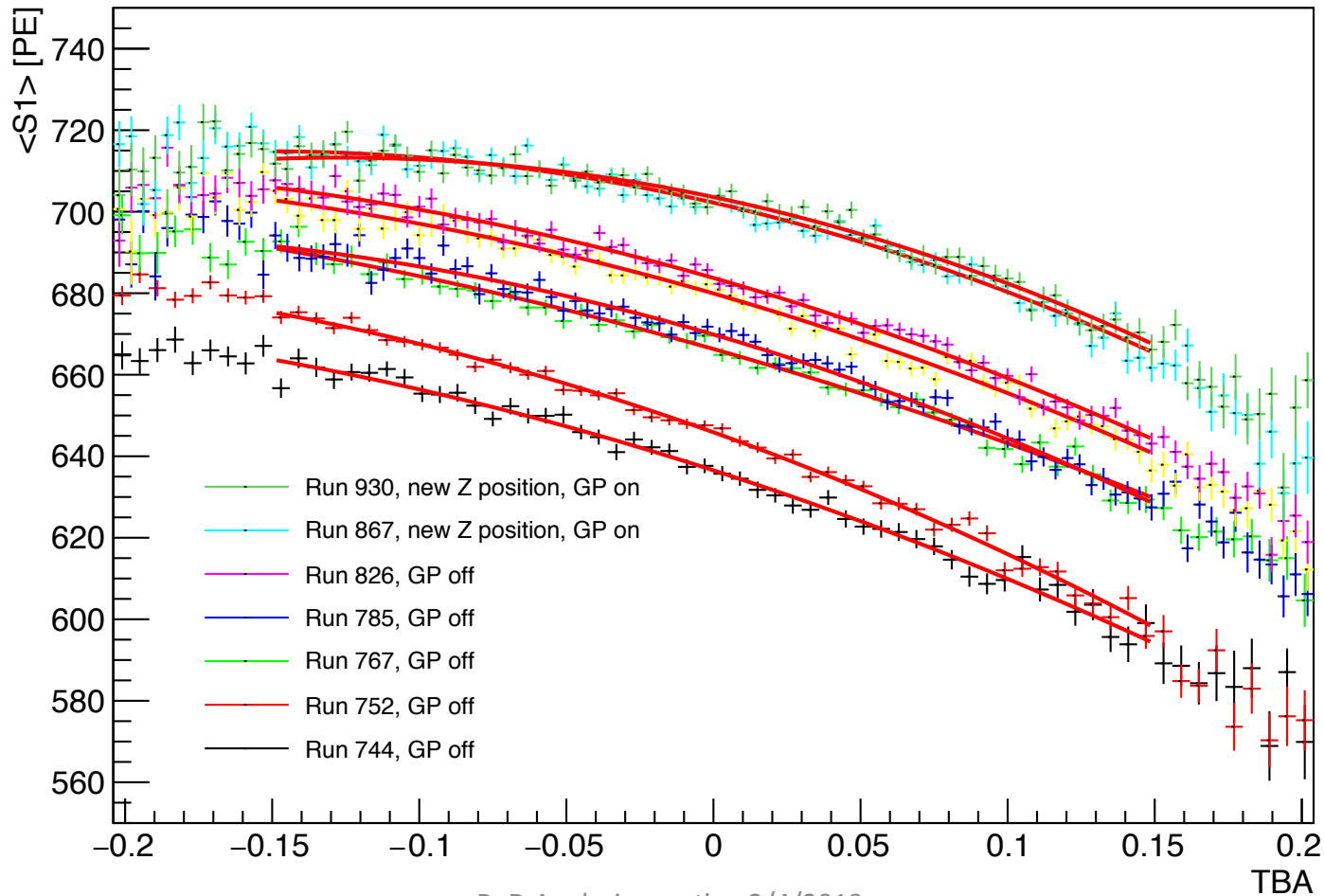
QUENCHING STUDIES

Checking $\langle S1 \rangle$ vs TBA for quenching study – Field on



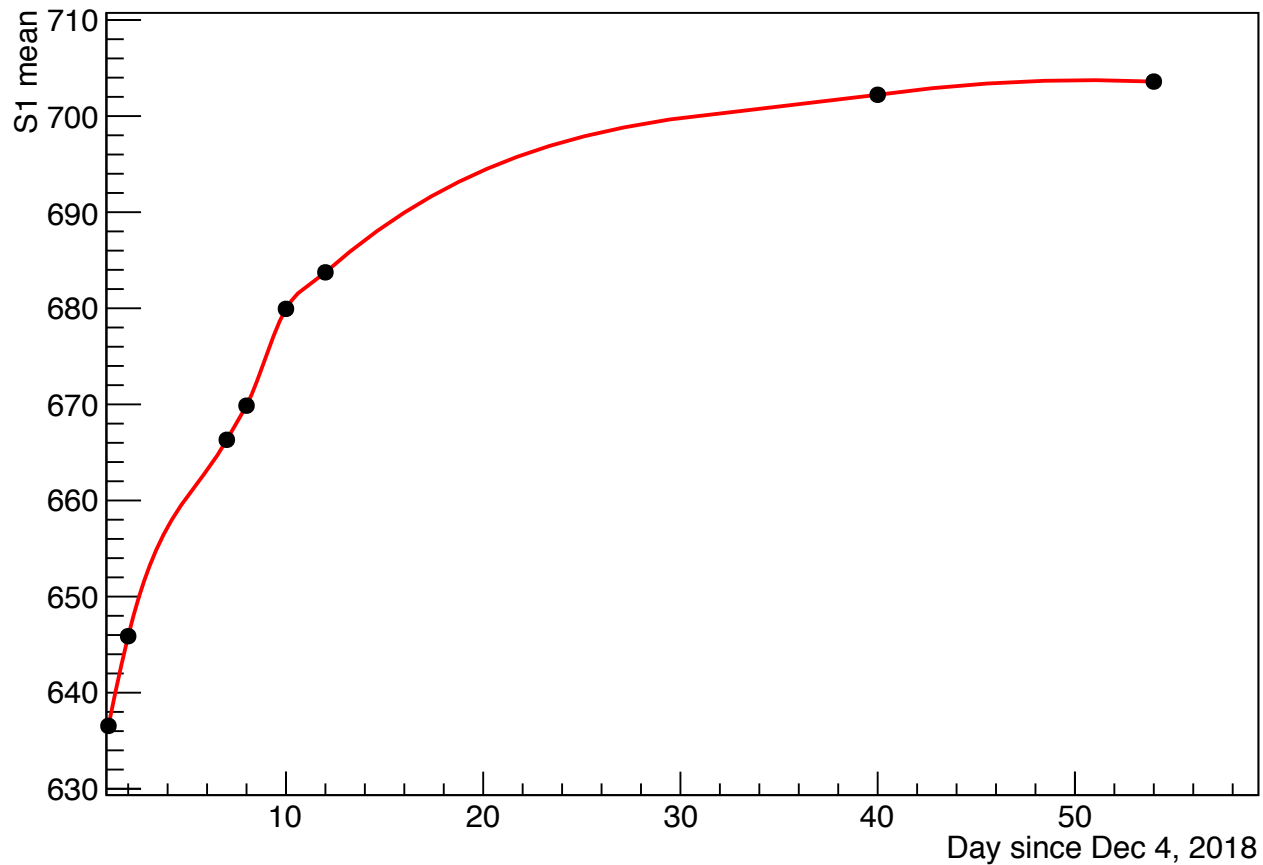
Check $\langle S1 \rangle$ vs TBA field off

clusters[0].charge:(clusters[0].tot_charge_top-clusters[0].tot_charge_bottom)/(clusters[0].tot_charge_top+clusters[0].tot_charge_bottom) (clusters[0].f90<0.2 && clusters[0].rep==1 && clusters[0].charge>350 && clusters[0].charge<1000)

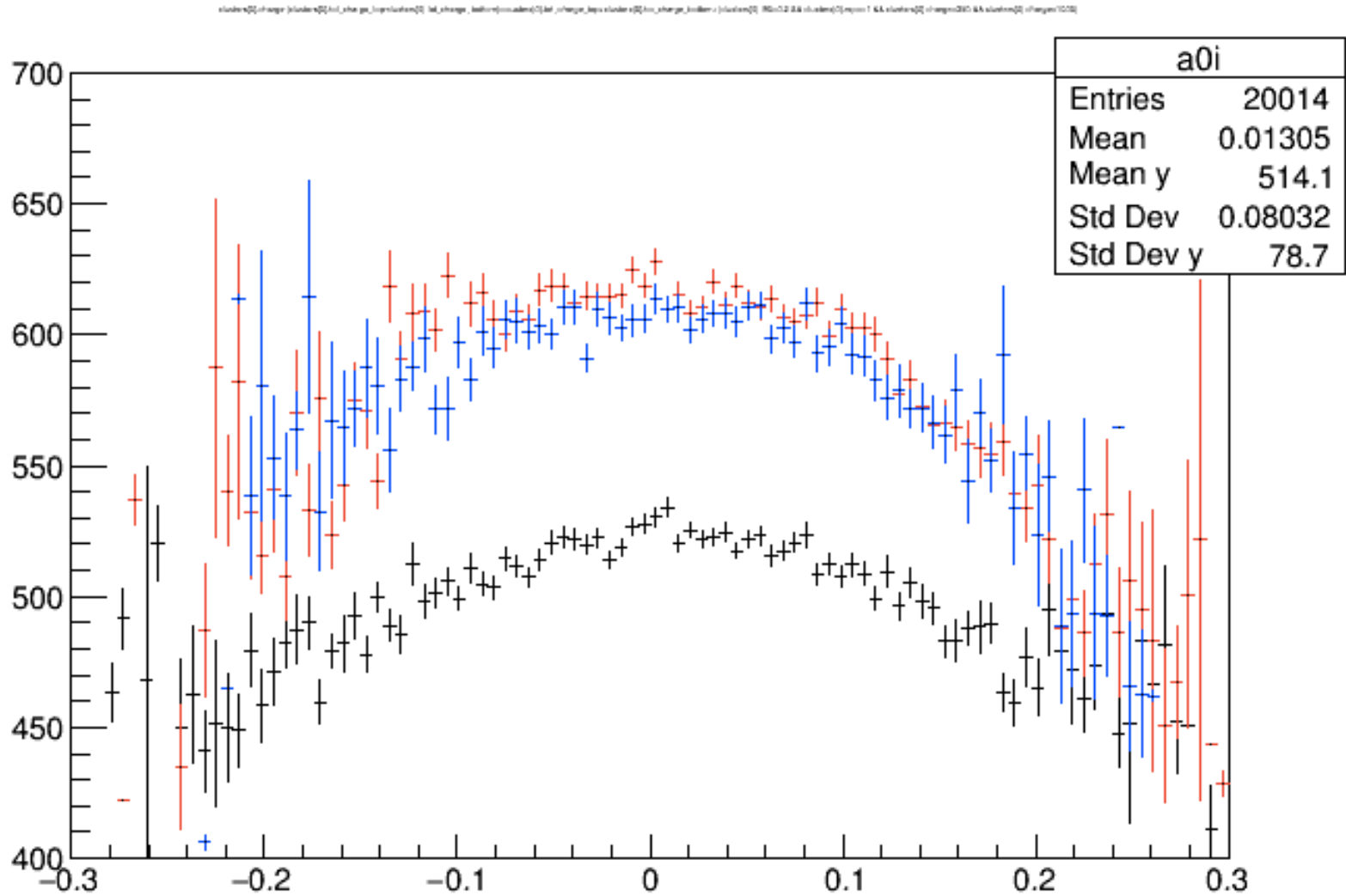


Apparent LY increase !

Am241 Field off S1 mean vs time



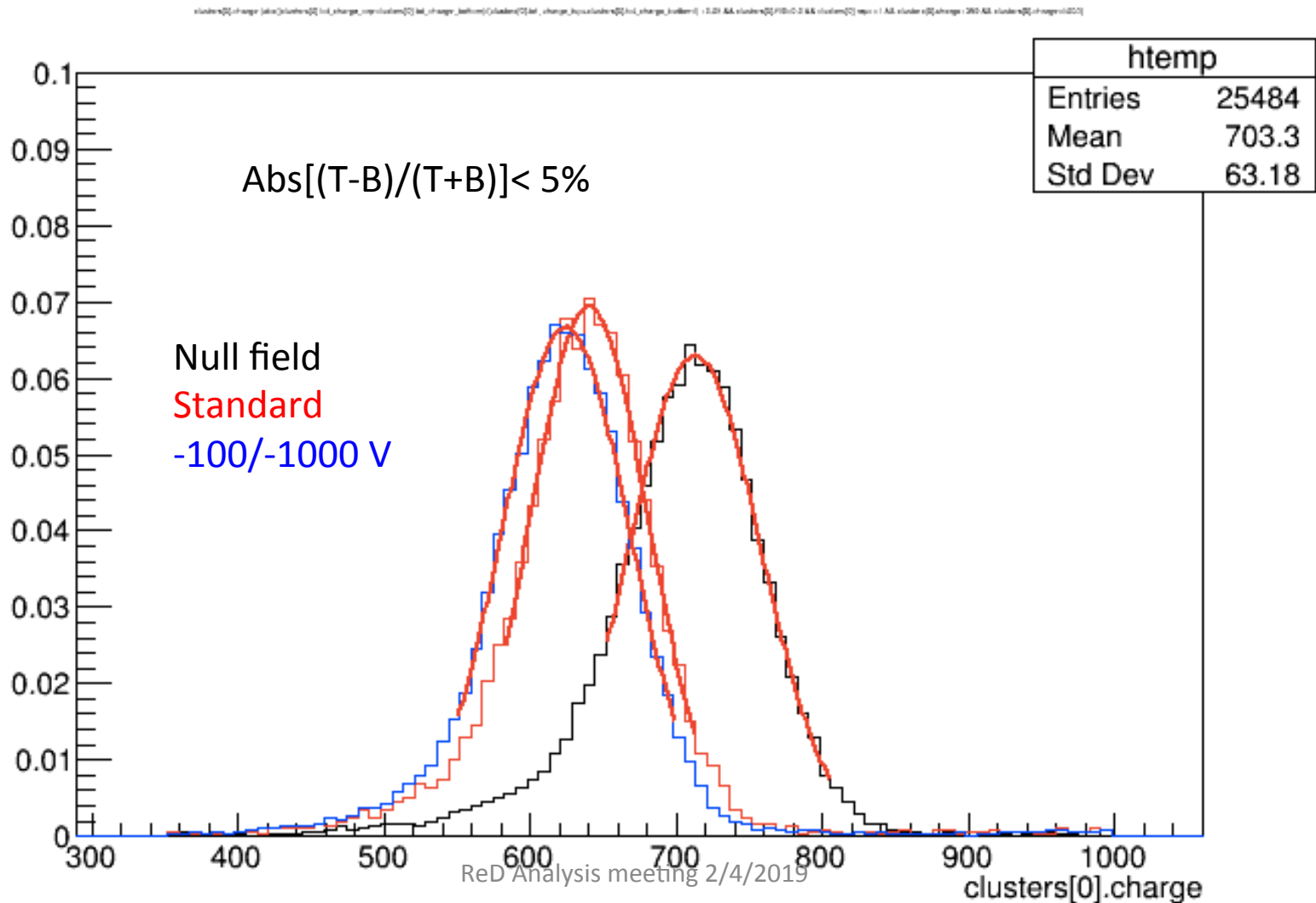
Same at LNS?



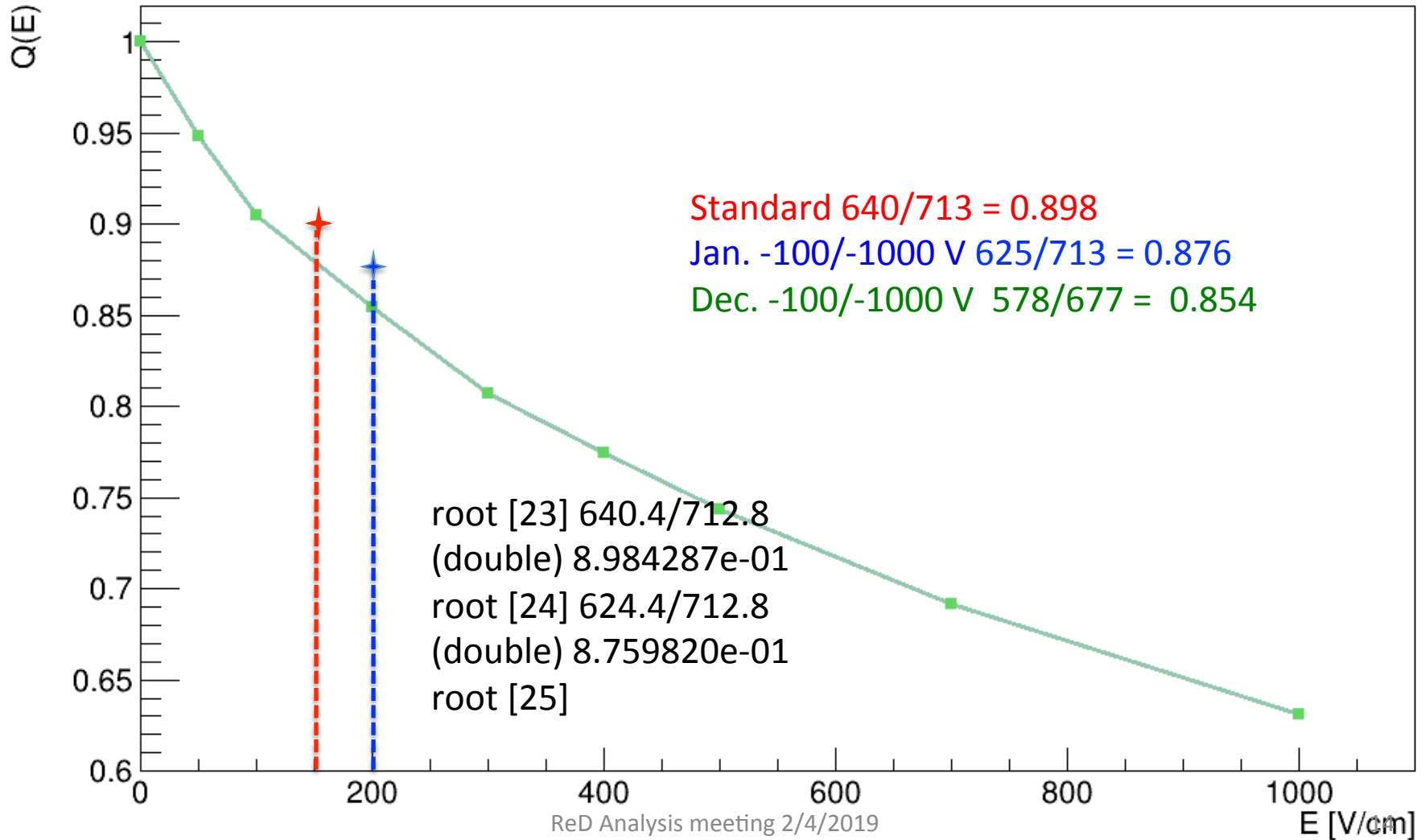
Summary

- Apparent LY increase with time..
- Optic may have changed. TPB peeling off? Apparently should go in the other direction, but even in LNS we never observed overall a lower apparent LY!
- Shape of S1 vs TBA is almost constant (gas pocket should not be a big factor here)
- Electron lifetime is going down, related?
- Source position slightly changed: should not affect too much the conclusions ($\langle S1 \rangle$ corresponding to 0 TBA events given)
- More studies:
 - Should check the SiPM AP/DiCT probability and PDE vs time. Is there a chance there is some migration of impurities?
 - Should check average S1 wave forms vs time

Quenching at nominal and “true” 200 V/cm (Mauro’s config)

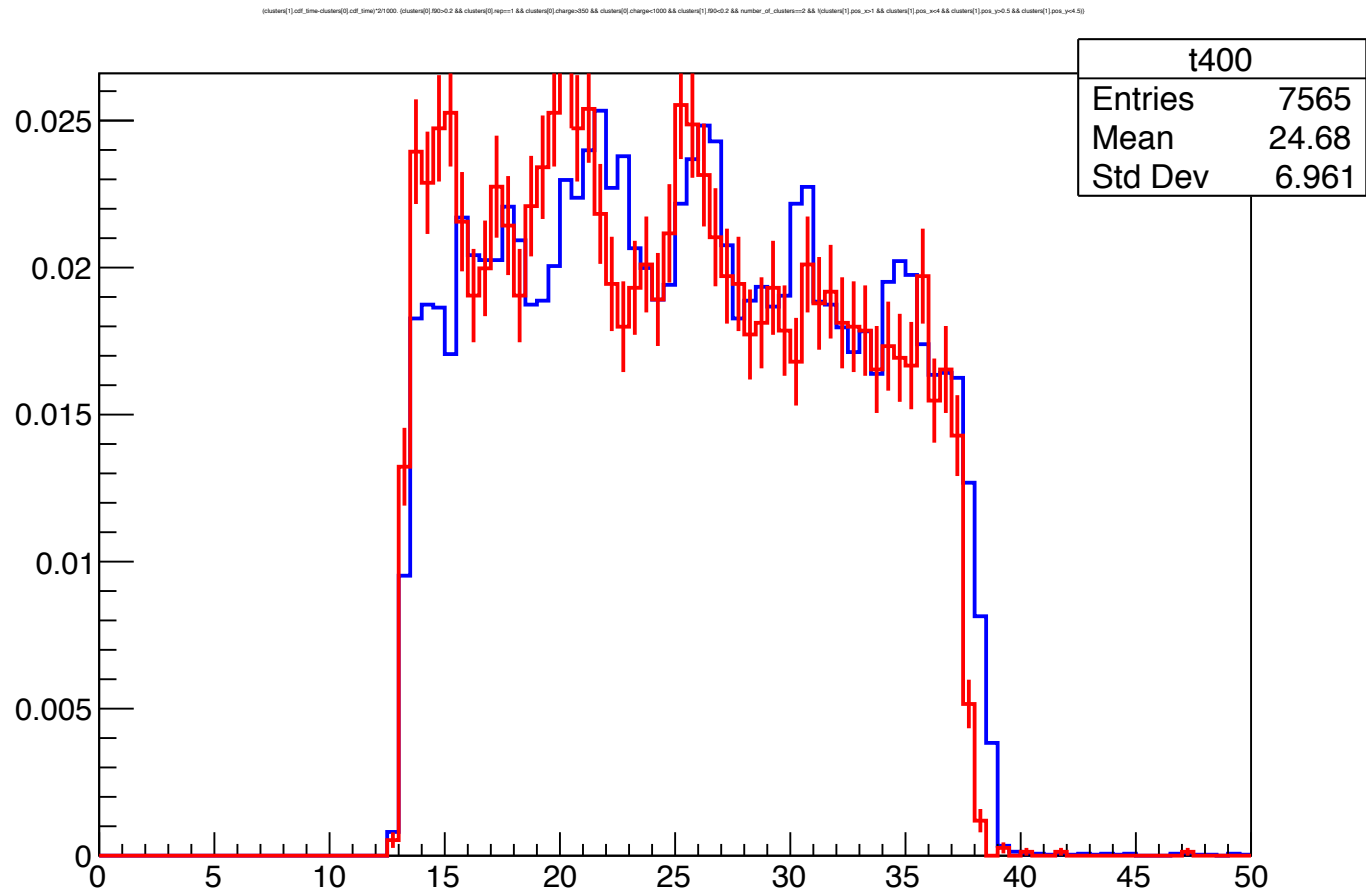


Quenching vs E



Spare

Internal vs external events slight change ?



S1 uniformity vs t_{drift} internal vs external events

