

TOF RECONSTRUCTION

- Code status
 - MC, Reconstruction
- Efficiencies
- MC
 - Validation with data

TOF RECONSTRUCTION

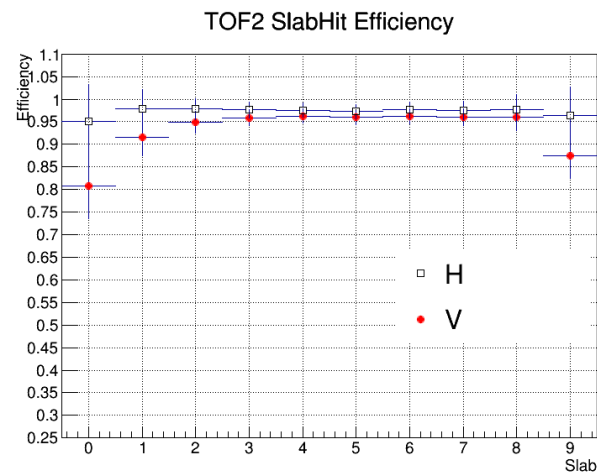
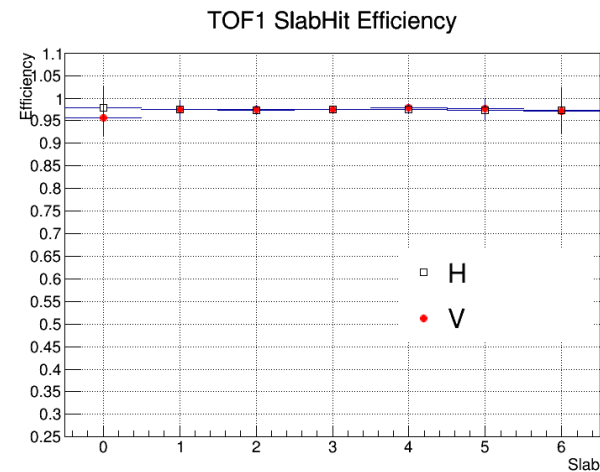
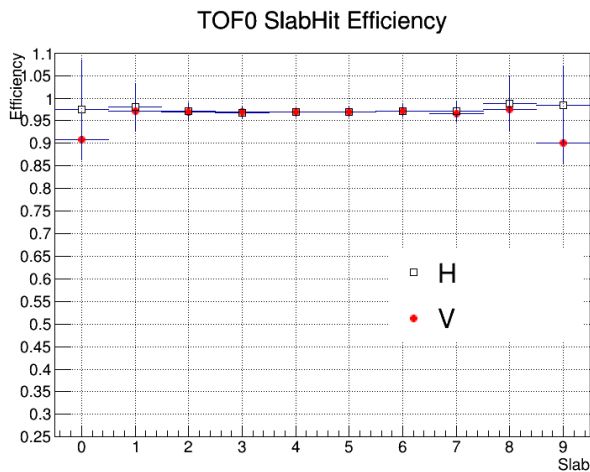
- Reconstruction code has been stable
 - Some changes to TOF data structure
 - “horizontal” and “vertical” slab naming more sensible
 - Methods to retrieve global positions of spacepoints
 - Rotations not taken into account in global transformation
- MC digitization code has been stable
 - MC output has:
 - True TOF hits (position, slab, time)
 - Digitized slab, time
 - Time digitization is “un-calibrated”
 - i.e. digitized time is un-corrected using calibration constants so that during spacepoint reconstruction the calibration corrections can be applied the same way as for real data

TOF EFFICIENCIES

- Want to know, for each TOF station
 - Efficiencies for forming:
 - Slab hits
 - Spacepoints
 - Want to know these slab-by-slab: $\sim f(x,y)$
 - Note: during spacepoint reconstruction, time calibrations are applied.
 - Efficiencies shown on following slides are from Run 7385 (TOF calibration run, Sep 26 '15)

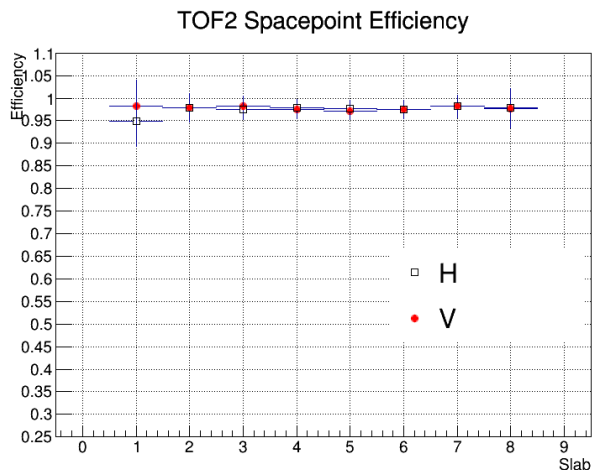
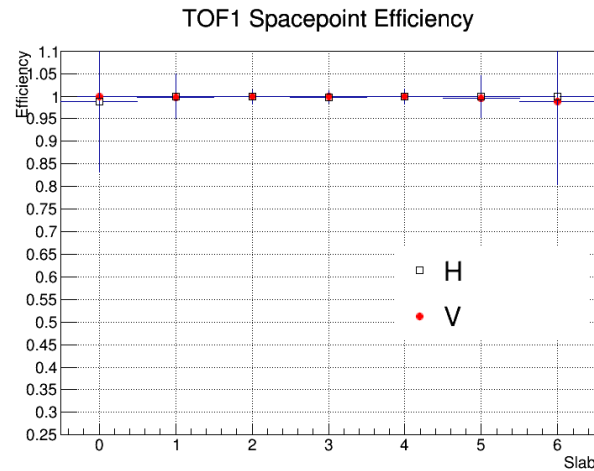
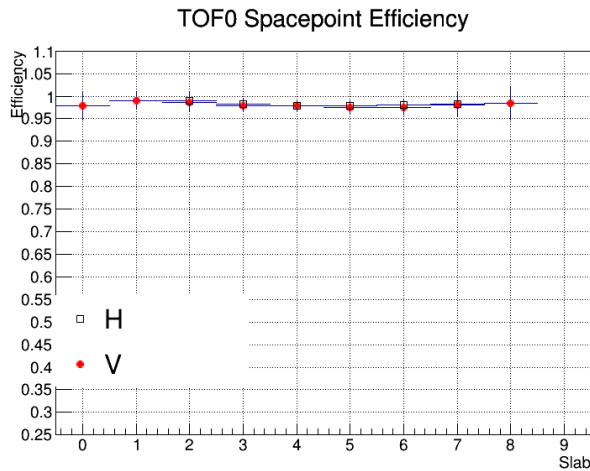
SLAB-HIT EFFICIENCY

- Slab-hit efficiency:
 - For a TOF station, If there's a hit in a V(H) slab, is there a hit in the corresponding H(V) slab



SPACEPOINT EFFICIENCY

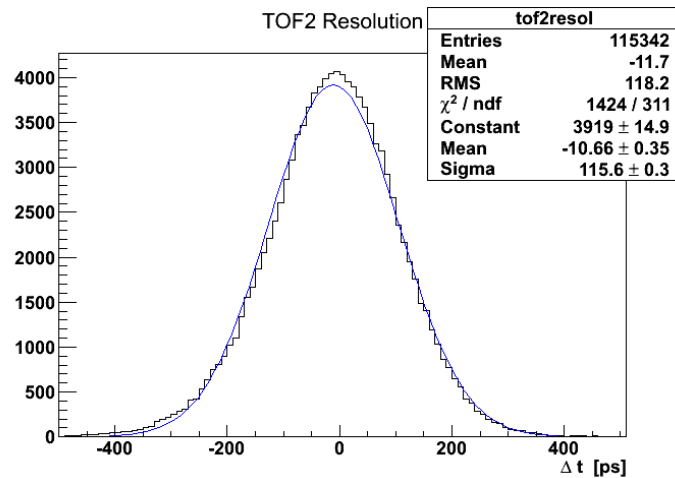
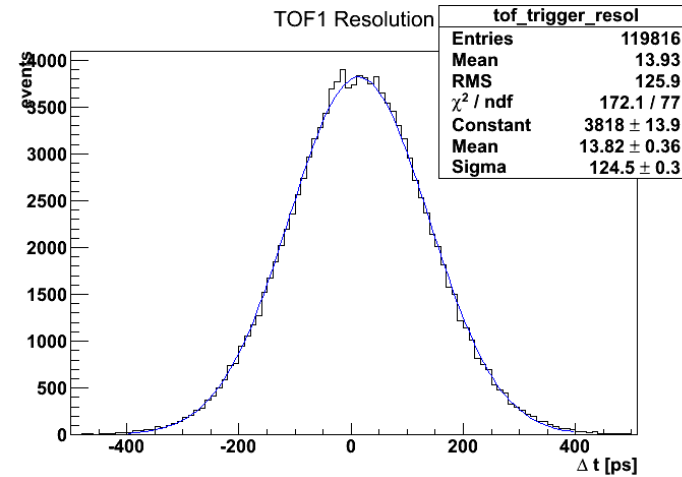
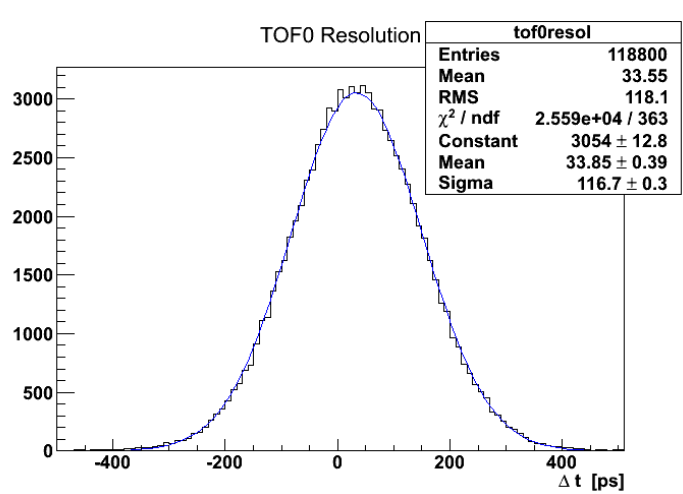
- Spacepoint efficiency:
 - For a V+H slab crossing, is there a spacepoint?



- No calibration coverage for TOF0 H slabs at top/bottom
- No calibration coverage for TOF2 V/H slab at edge

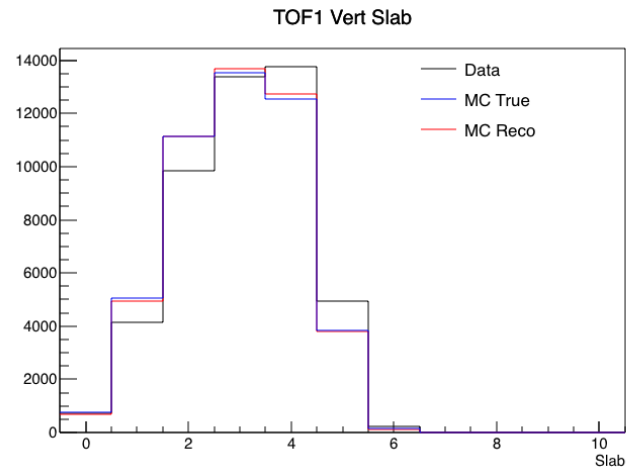
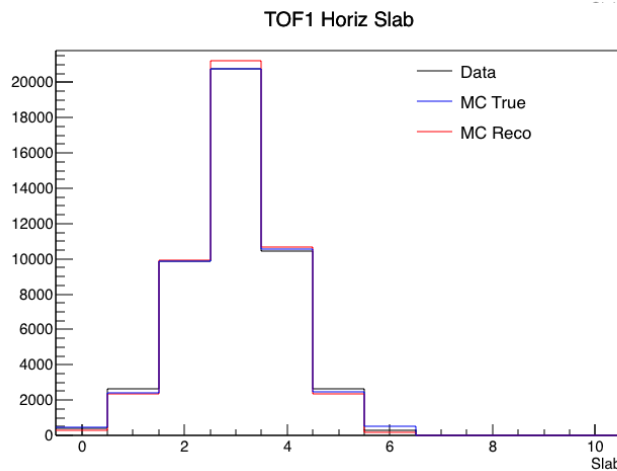
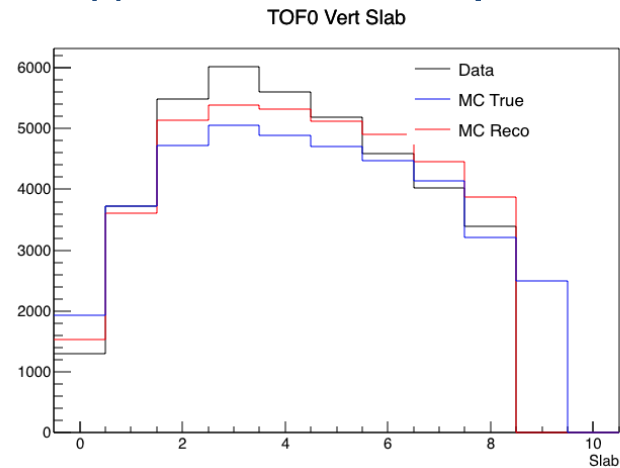
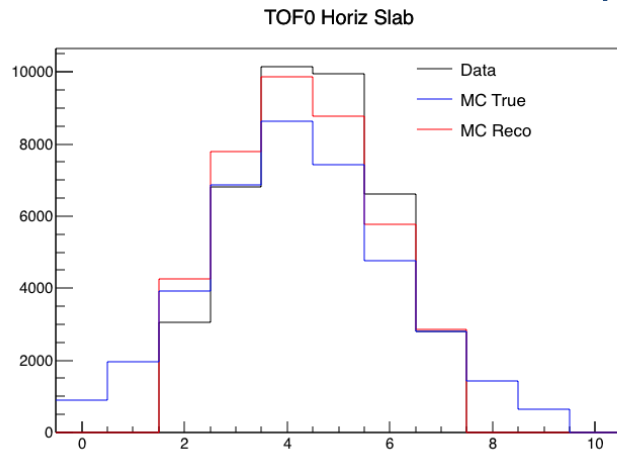
RESOLUTIONS

- Resolutions
 - No change since March 2015 (with then-new trigger)



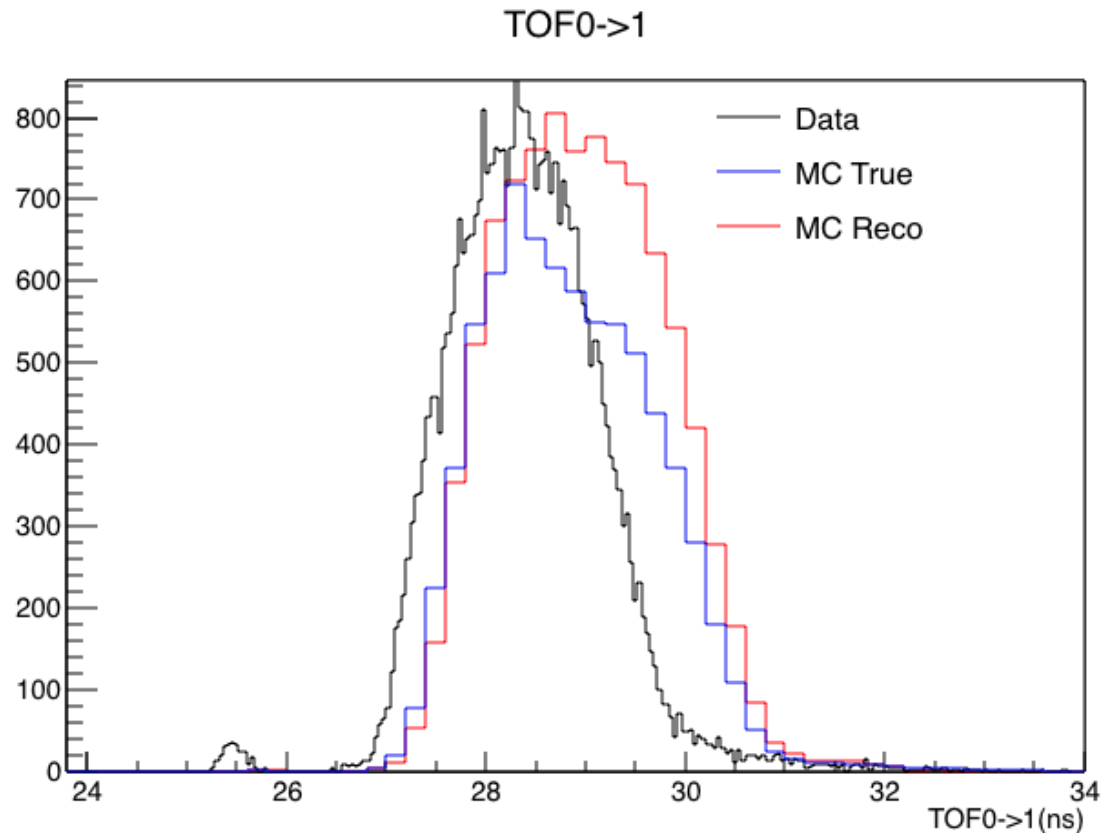
TOF MC

- Run 7469 – 200 MeV μ^+ , 4T in SSU E-C-E
- MC simulation for Run 7469
- Truth/MC Reco/Data in good agreement for position



TOF MC

- Some issues with the reconstructed time
 - MC Truth & MC Reco agree, but both shifted from data by ~ 0.5 ns
 - Also, very few electrons in MC compared with data (3-200, 4T run 7469)



- Same TOF0-1 distance used in MC and in calibrating e^+ time.
Digging...