Compton FADC Photon Counting DAQ Status

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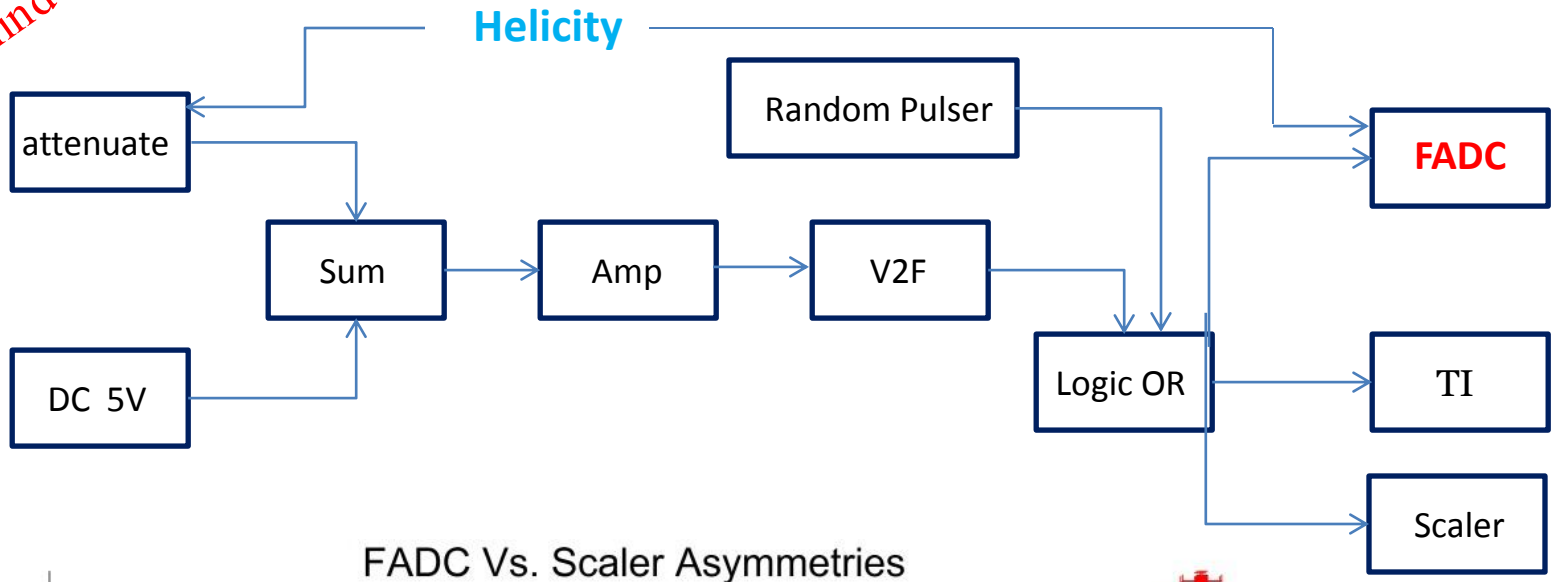
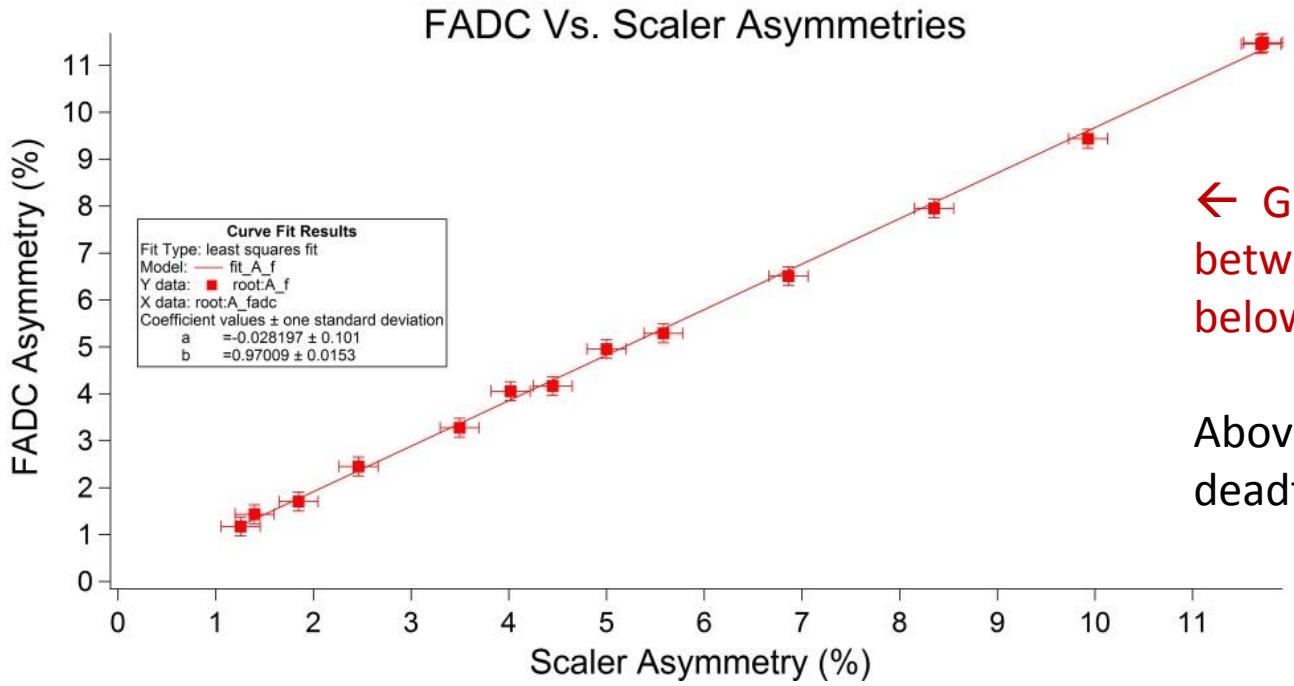
Compton Polarimeter

Tests to simulate & measure asymmetries

reminder





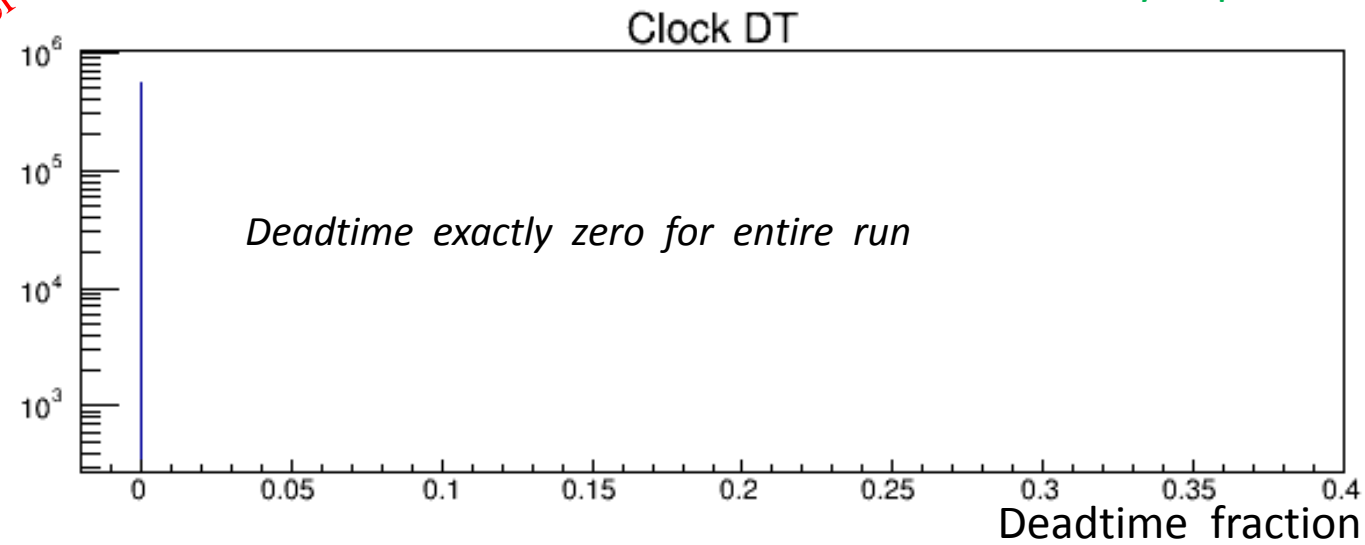
← Good agreement between FADC and scaler below f_c = **300 kHz**

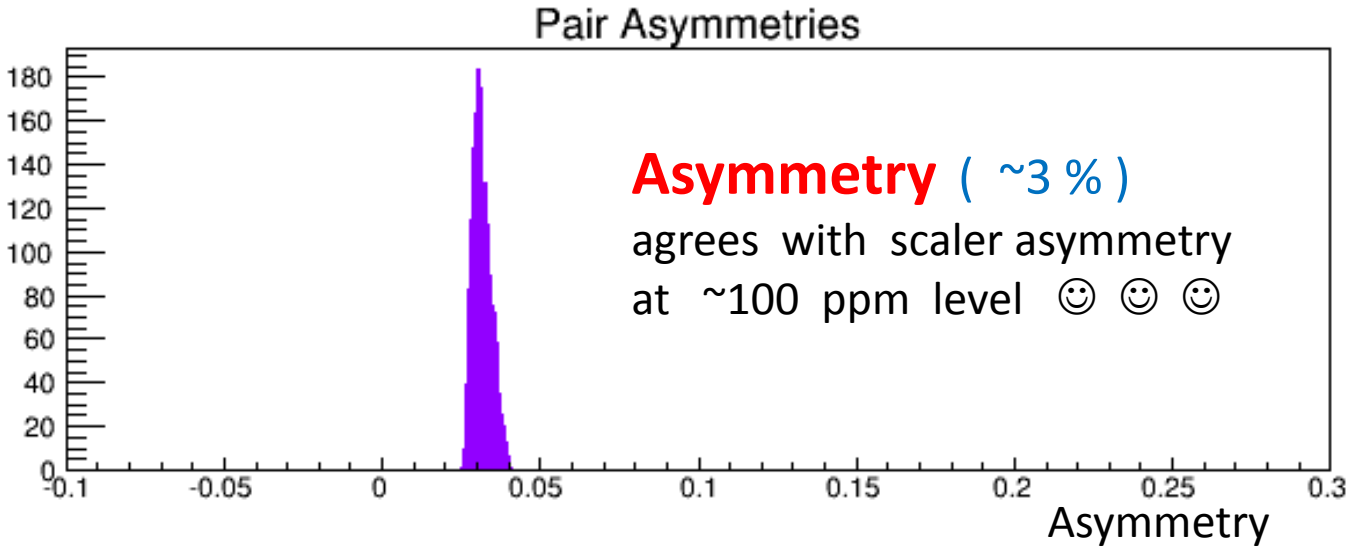
Above f_c : needed work on deadtime correction

Run #1590 **Rate = 277 kHz** **zero deadtime**

Helicity flip 60 Hz

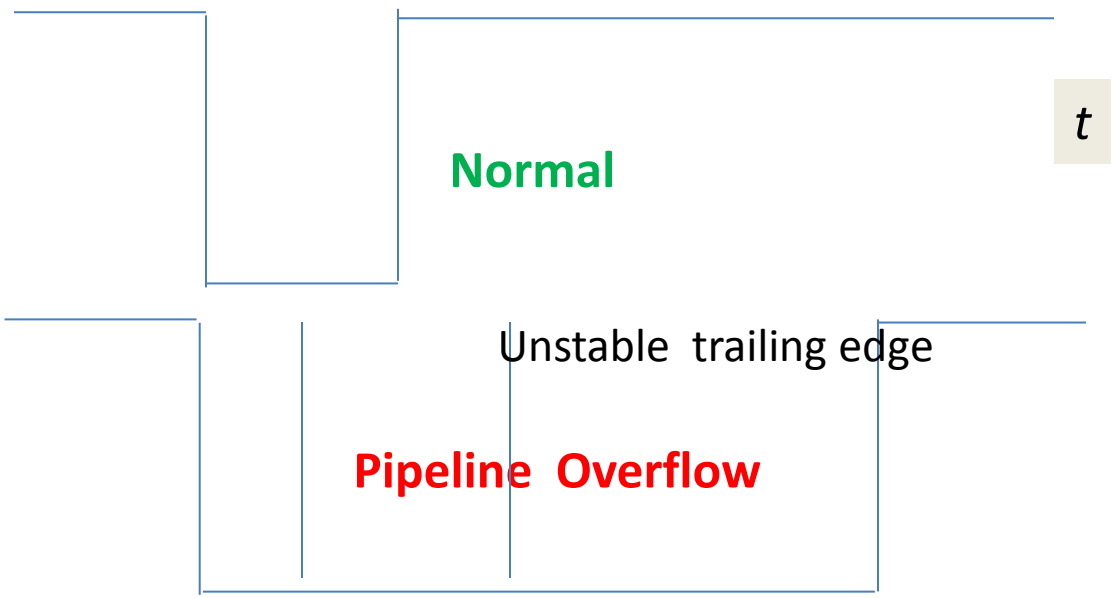
reminder





Exploring f > fc (> 300 kHz)

Busy Signal (scope trace)



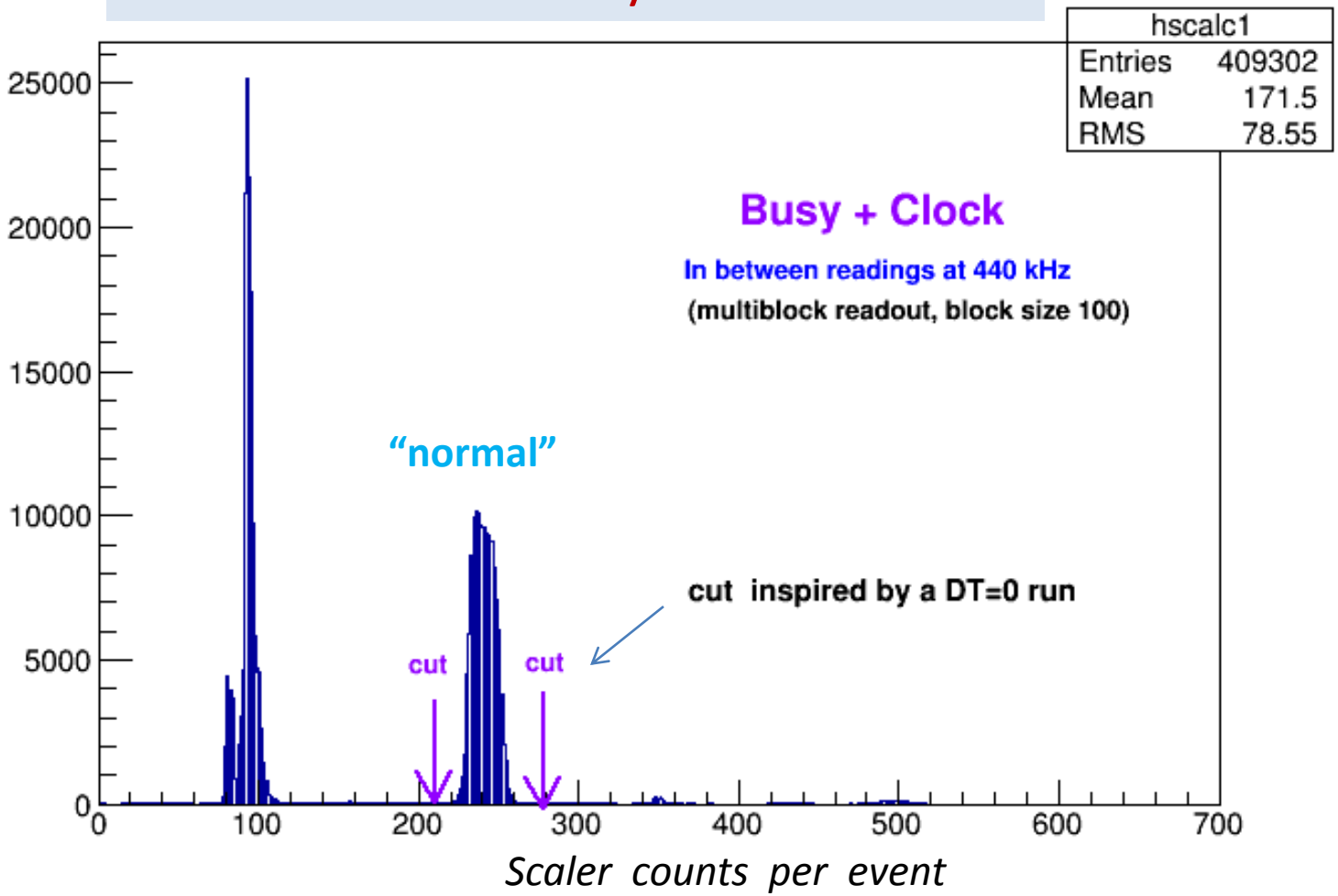
Put into scaler and read with each event:

Busy .AND. Pulser -- deadtime

Busy .AND. Helicity .AND. Pulser -- deadtime in helicity window

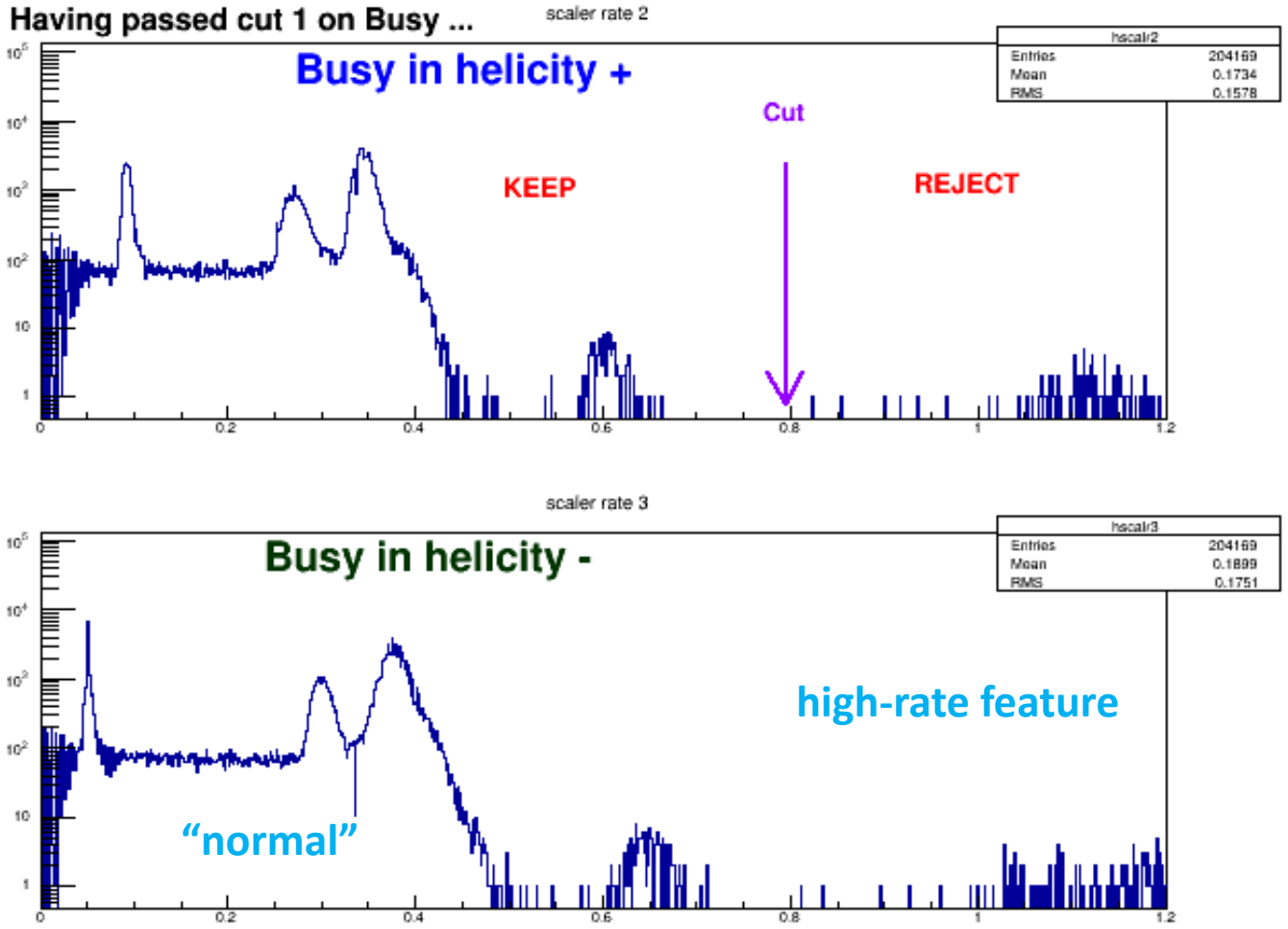
where Pulser = 3 Mhz clock

Deadtime from Busy .AND. Pulser



(These data is not well understood)

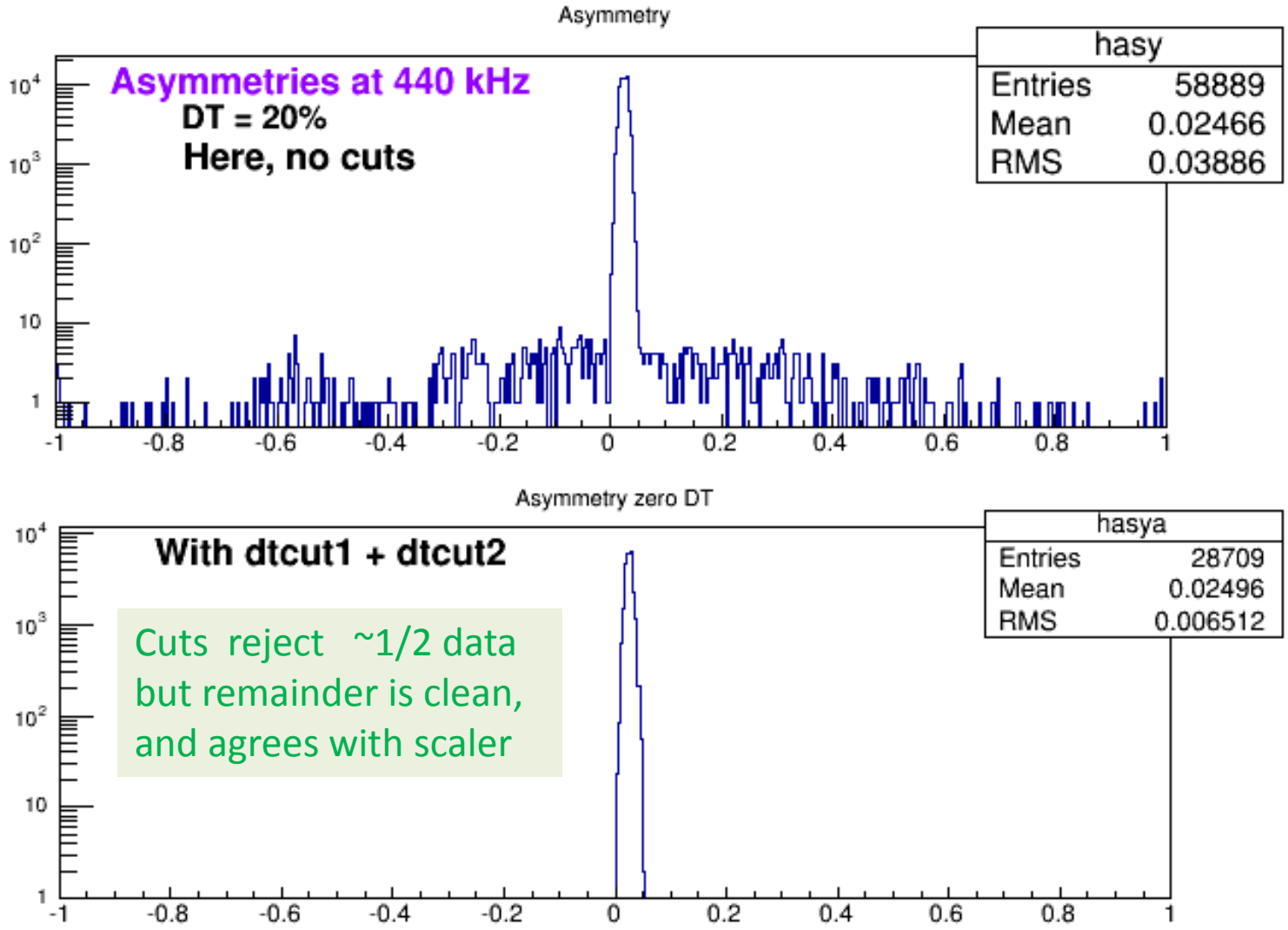
Helicity Deadtime: Busy .AND. Pulser .AND. Helicicty



Scaler rate normalized to clock

(These data is not well understood)

Dramatic Cleanup of High-Rate Asymmetry Data



Compton Asymmetry (2.5 %)

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1. Still some work to do to understand scaler deadtime measurements

2. Perhaps a way to run:
   a) try to stay below fc
   b) for f > fc use cuts on DT (but no helicity cuts)

3. Plans
   Add as an option for Integrating (CMU) DAQ
   Can run 2 crates together, or separately