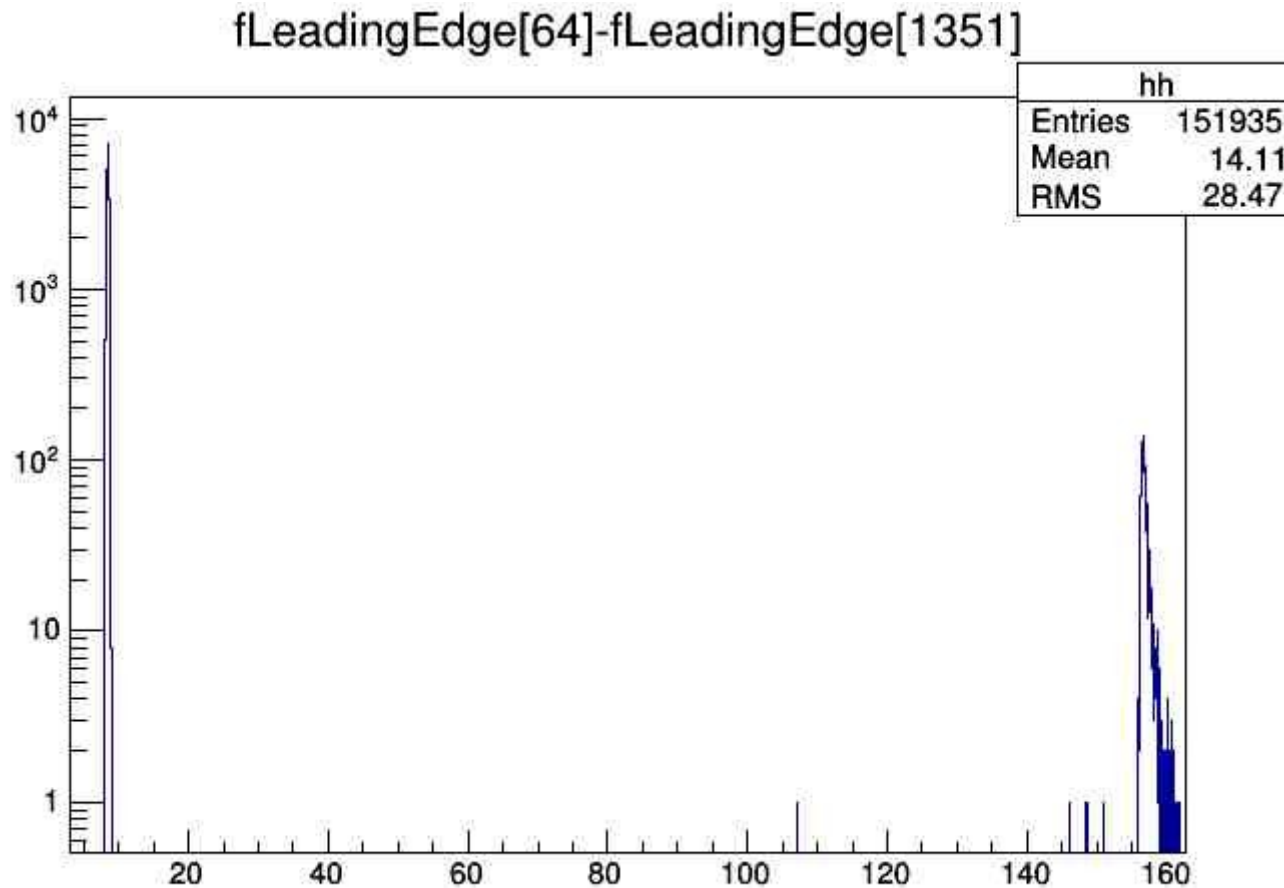


# On the timing resolution of the Barrel-DIRC setup



Simply by eye: pulser (left) has better timing resolution than photons (right)

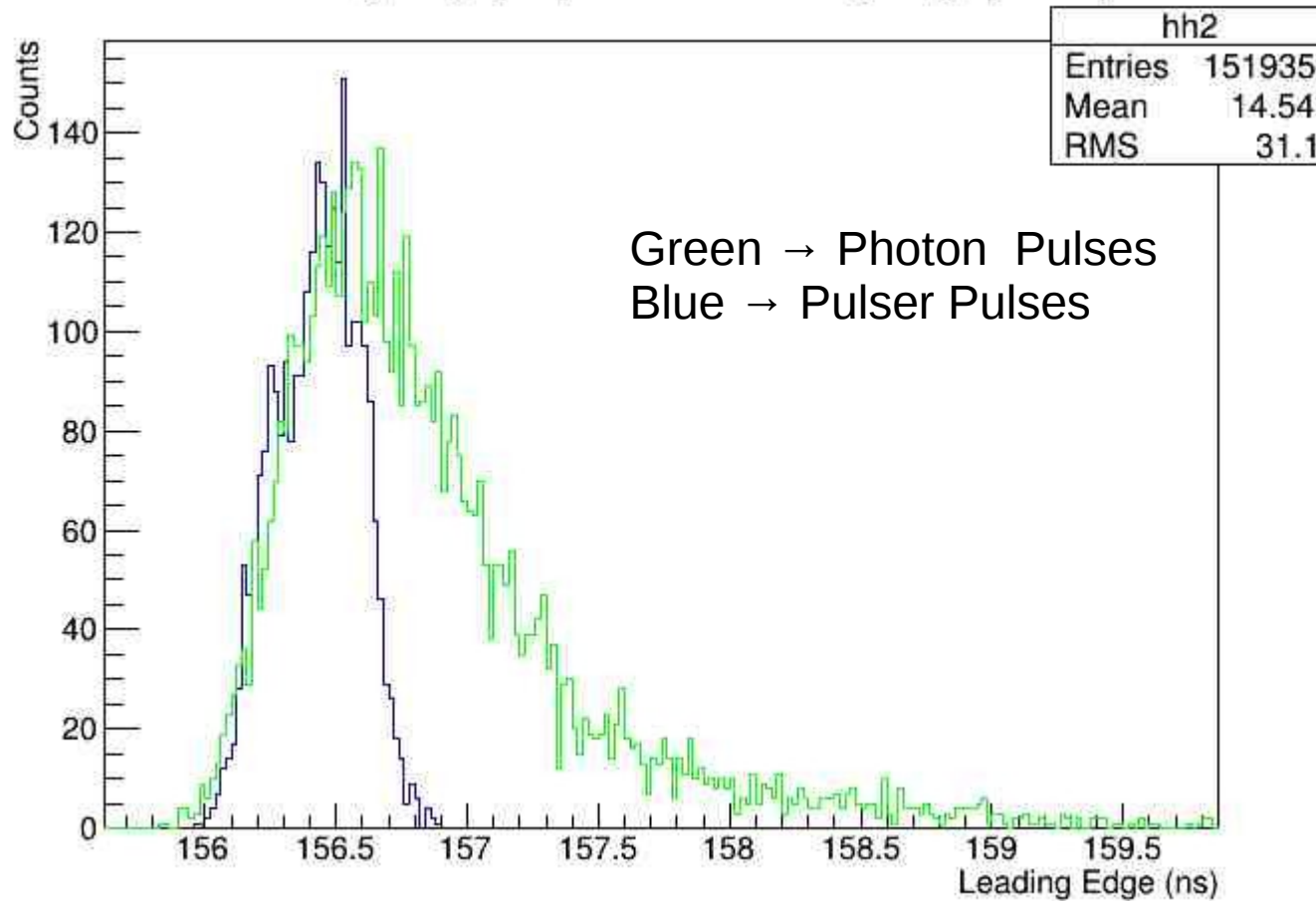
Pocket pulser: 800ps rise time.

# Same channel Photon/Pulser

47pF

cc16231110131.A.root

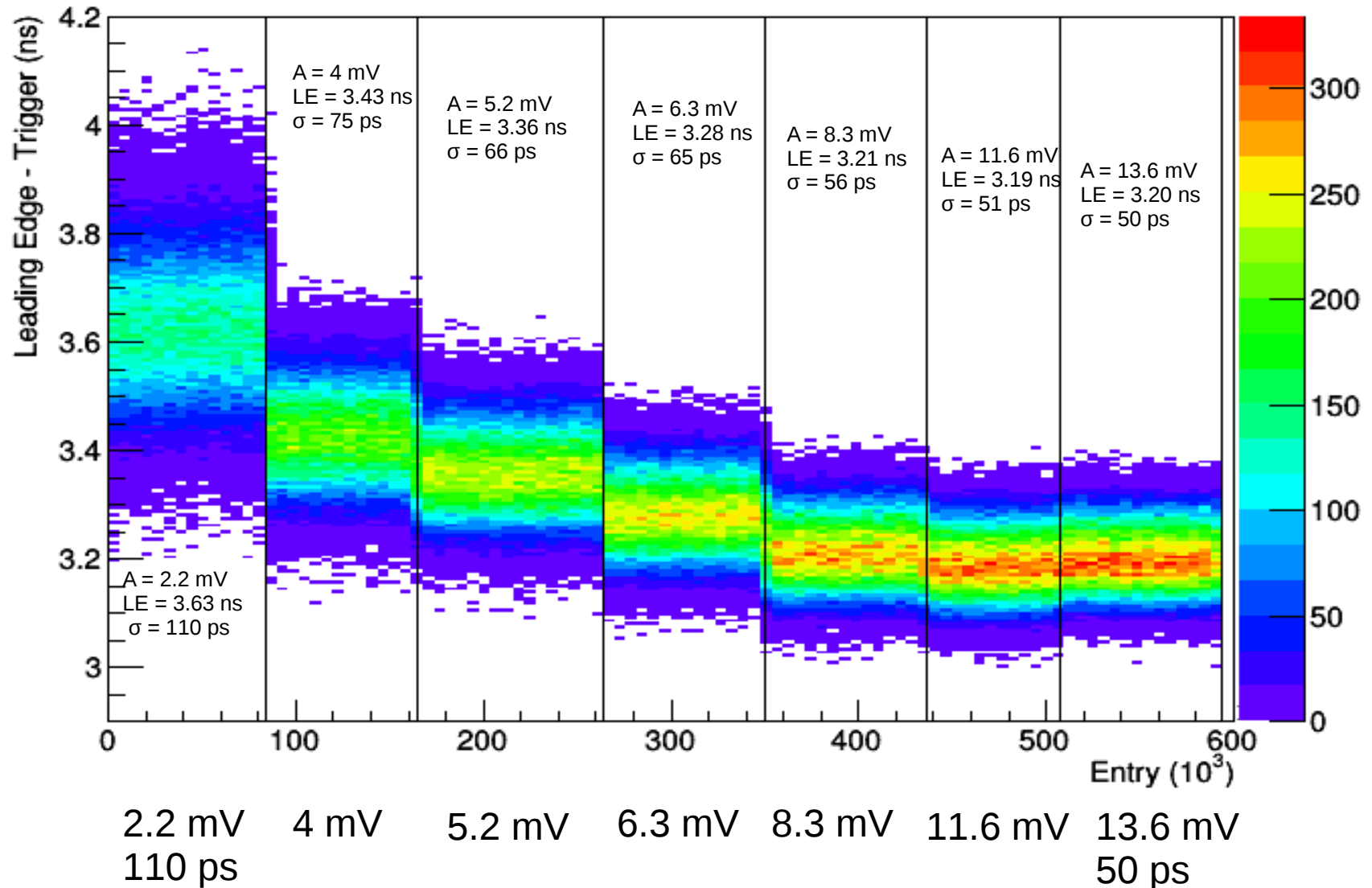
fLeadingEdge[64]+148.-fLeadingEdge[1351]



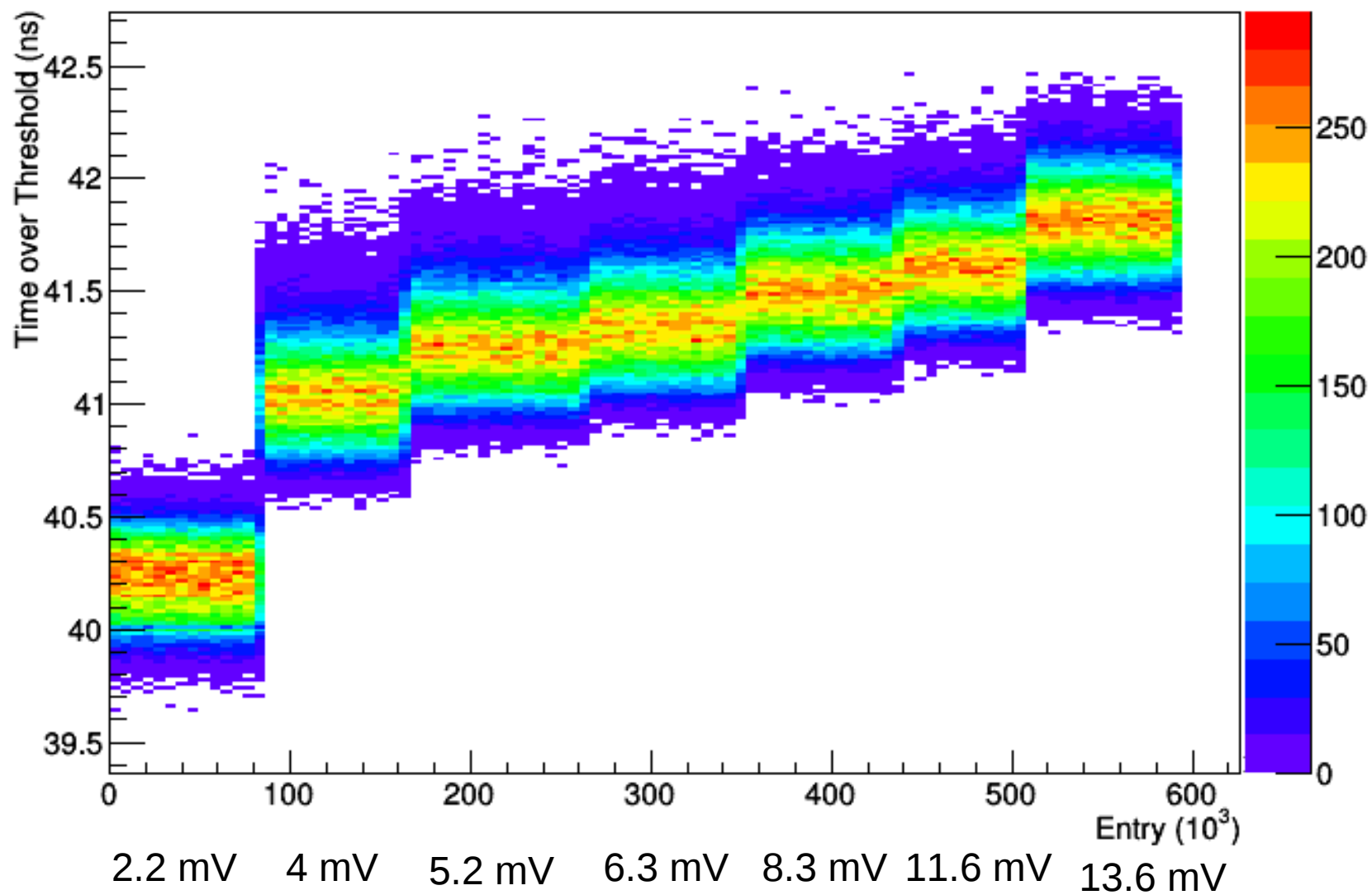
## How the TOT helps to select amplitudes to limit walk

The following transparencies are for 10pF

### 10pF Padiwa, HV off, Pulser Signal Response



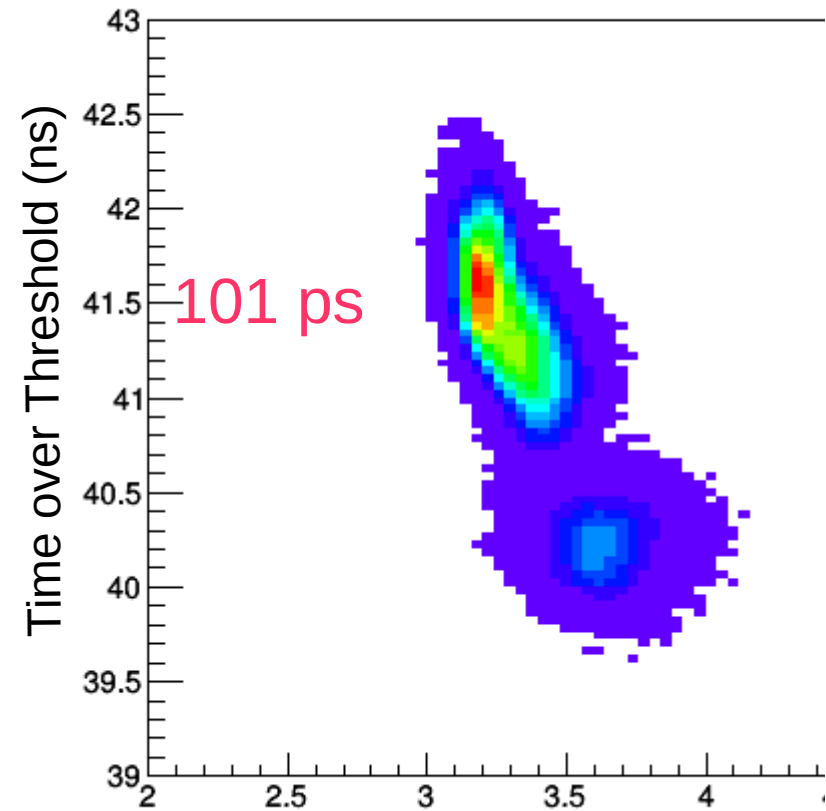
# 10pF Padiwa, HV off, Pulser Signal Response





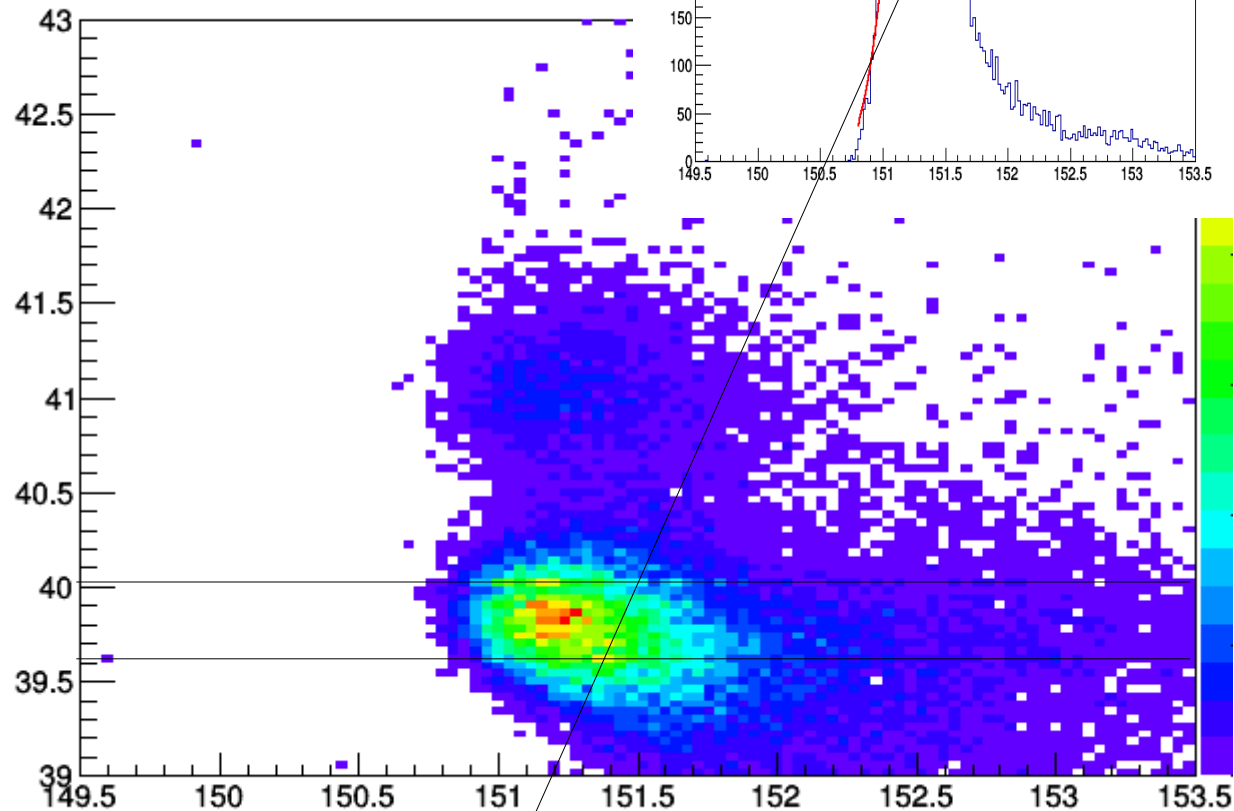
Same data set as above

fTot[143]:(fLeadingEdge[143]-fLeadingEd



LeadingEdge - Trigger (ns) (same range)

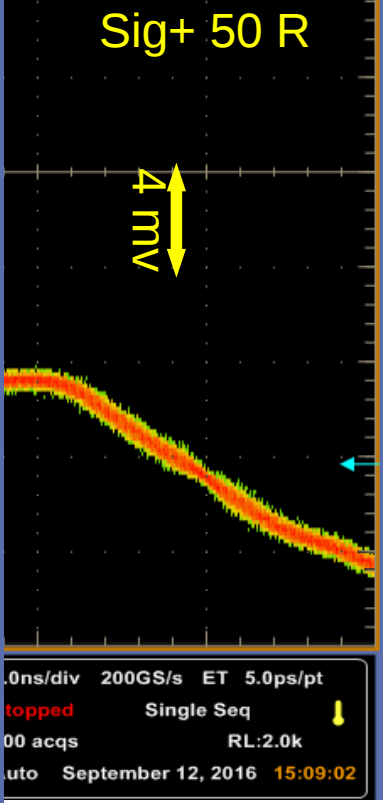
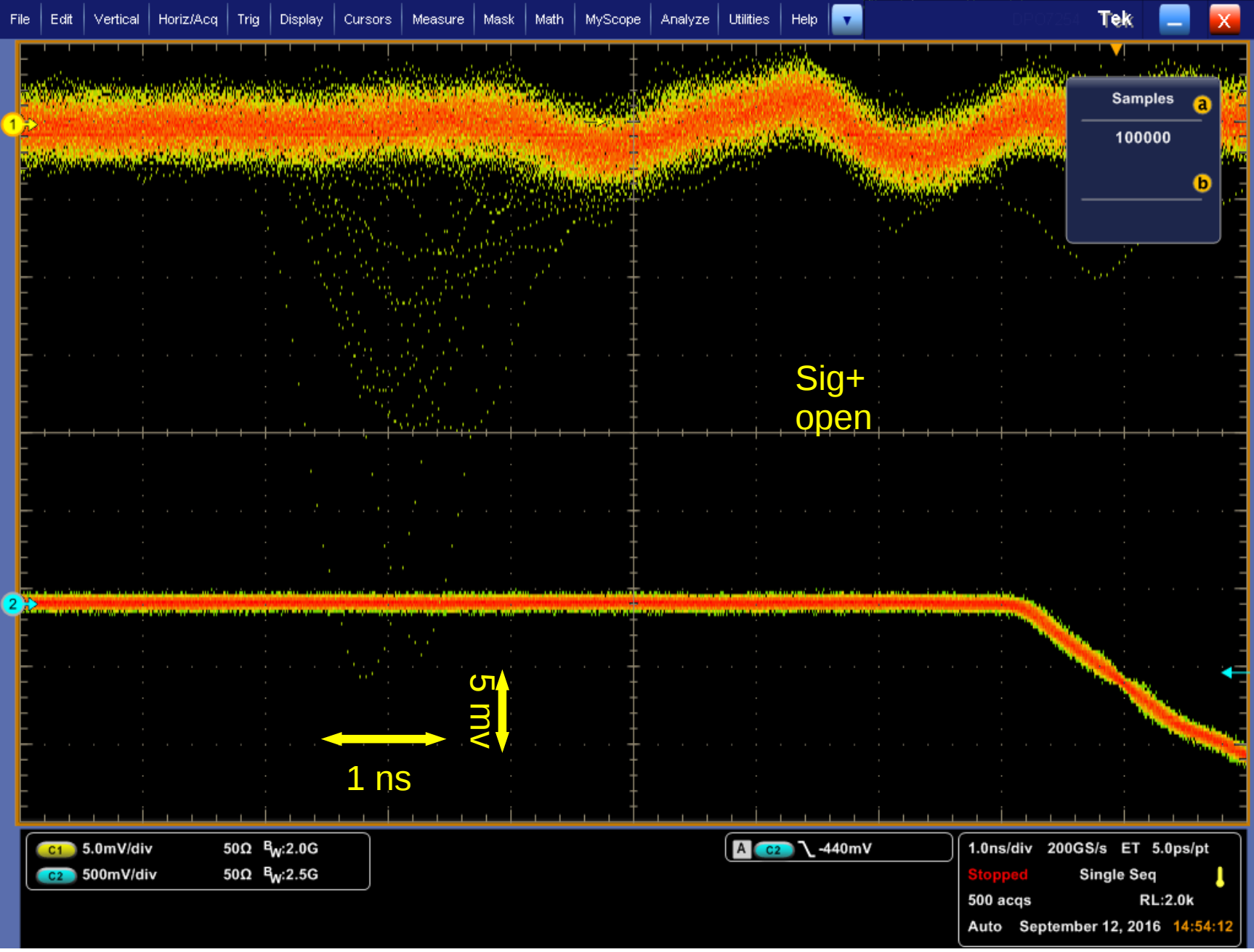
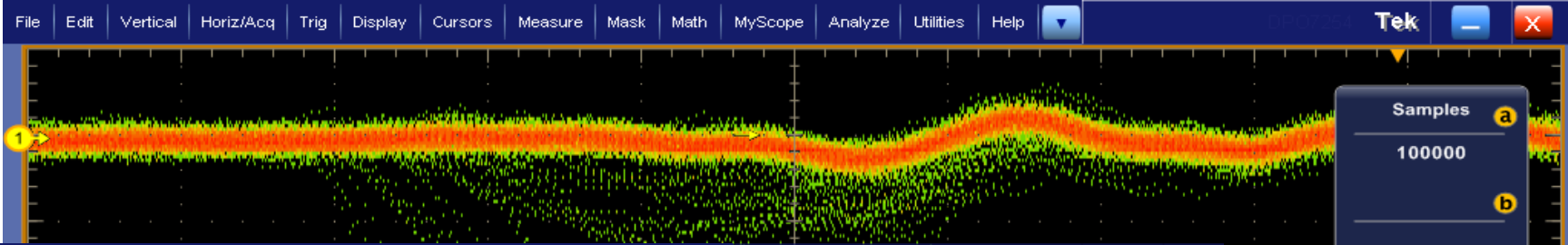
fTot[143]:(fLeadingEdge[143]-fLeadingEdge[1351]) (abs(fTot[143]) < 2)



202 ps

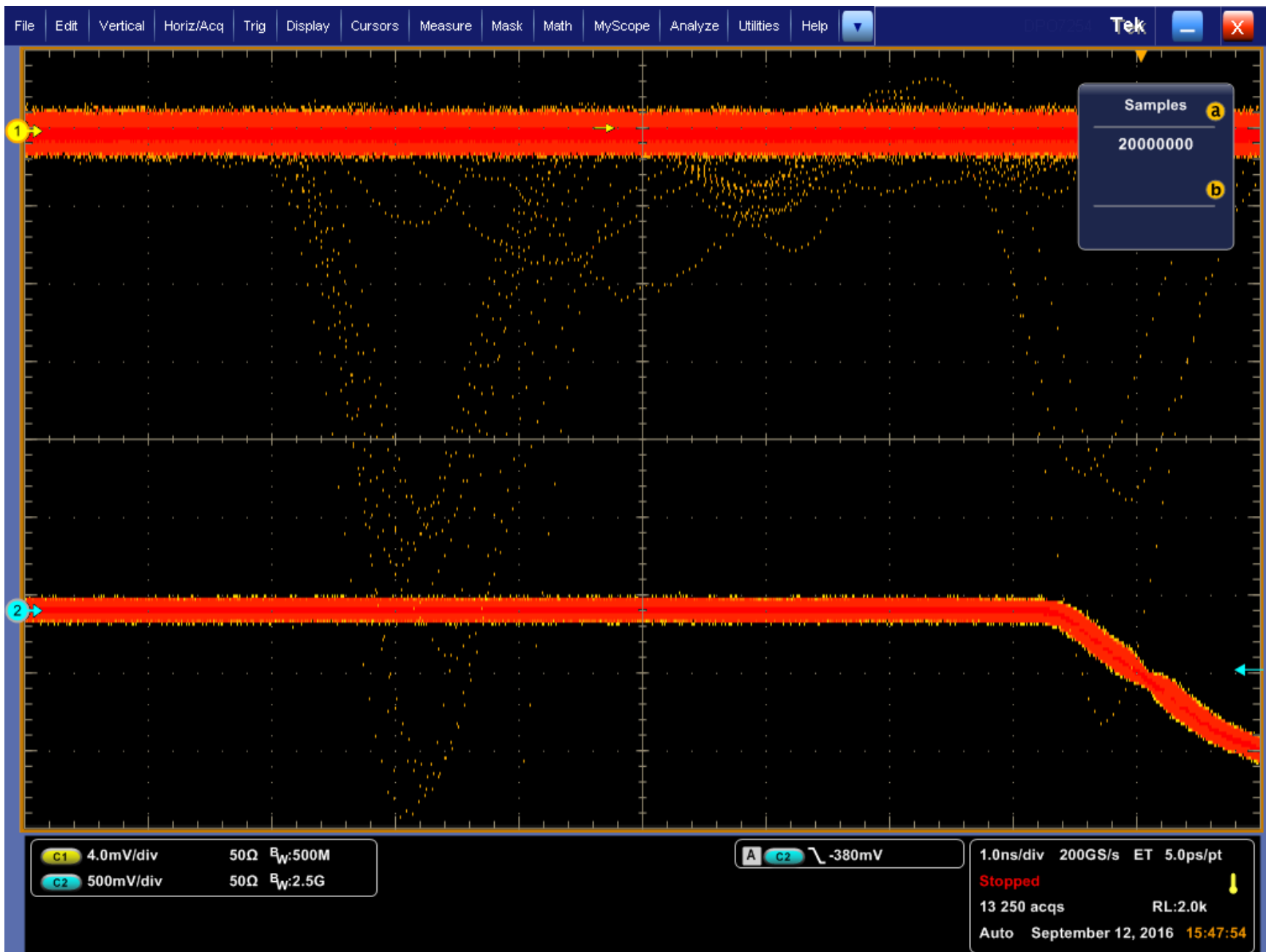
The electronics is able to measure timing resolution < 100ps

Planacon #1358  
(ALD)  
HV: 1950V



Time jumps visible

Not due to baseline



With mask (different pixel than above)  
better timing resolution (sigma ~ 70ps)



Electronics performs as expected and can measure small signals (4mV) with timing resolution sigma  $\sim$  75ps

The Planacon tube (#1358, 1950V) shows timing jumps

Not observed with mask for single pixel

The laser intensity is low  $< 1/10$  per trigger

Next: experiments with different mask configurations