

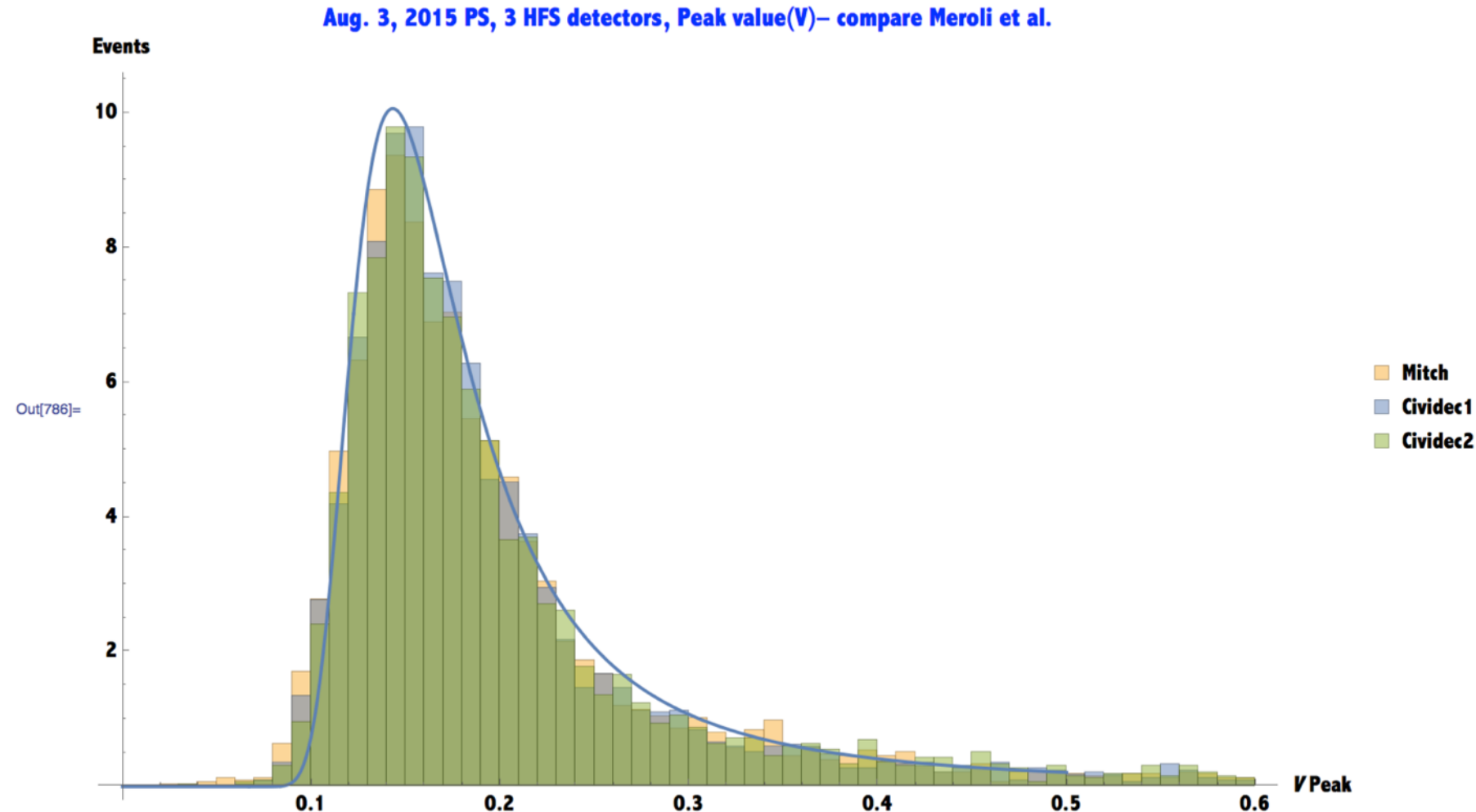
MIP data for Sim Comparison

S. White, CERN/Princeton RD50 mtg. Jan. 27, 2016

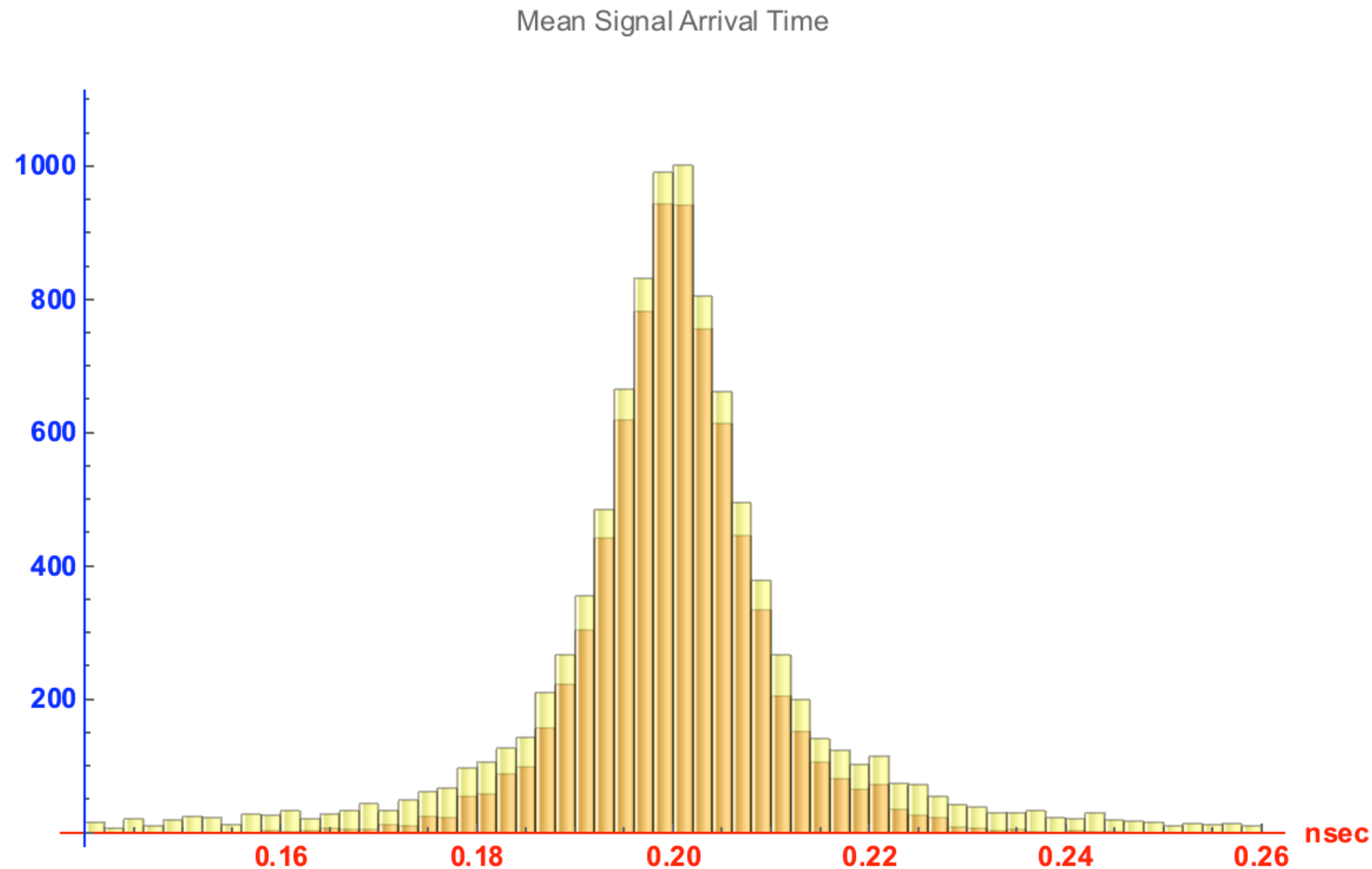
aside from Vcsl/laser data (Lu's talk) we have measurements useful for baselining Synopsis simulated waveforms.

It would be really nice to also have laser data for 2 vs 5 mil dielectric since we are ready to start new packaging.

- 1) evidence for narrower pulse in response to 390 psec Vcsl at lower bias
- 2) evidence for a different gain curve for IR vs dc measurements of visible (not surprising in view of Lu's talk?)
- 3) statistically Landau shape preserved at high gain



- which data to isolate effect of Landau fluctuations on time jitter?
- In earlier model, which removed effect of impact ionization pulse height cuts very effective:

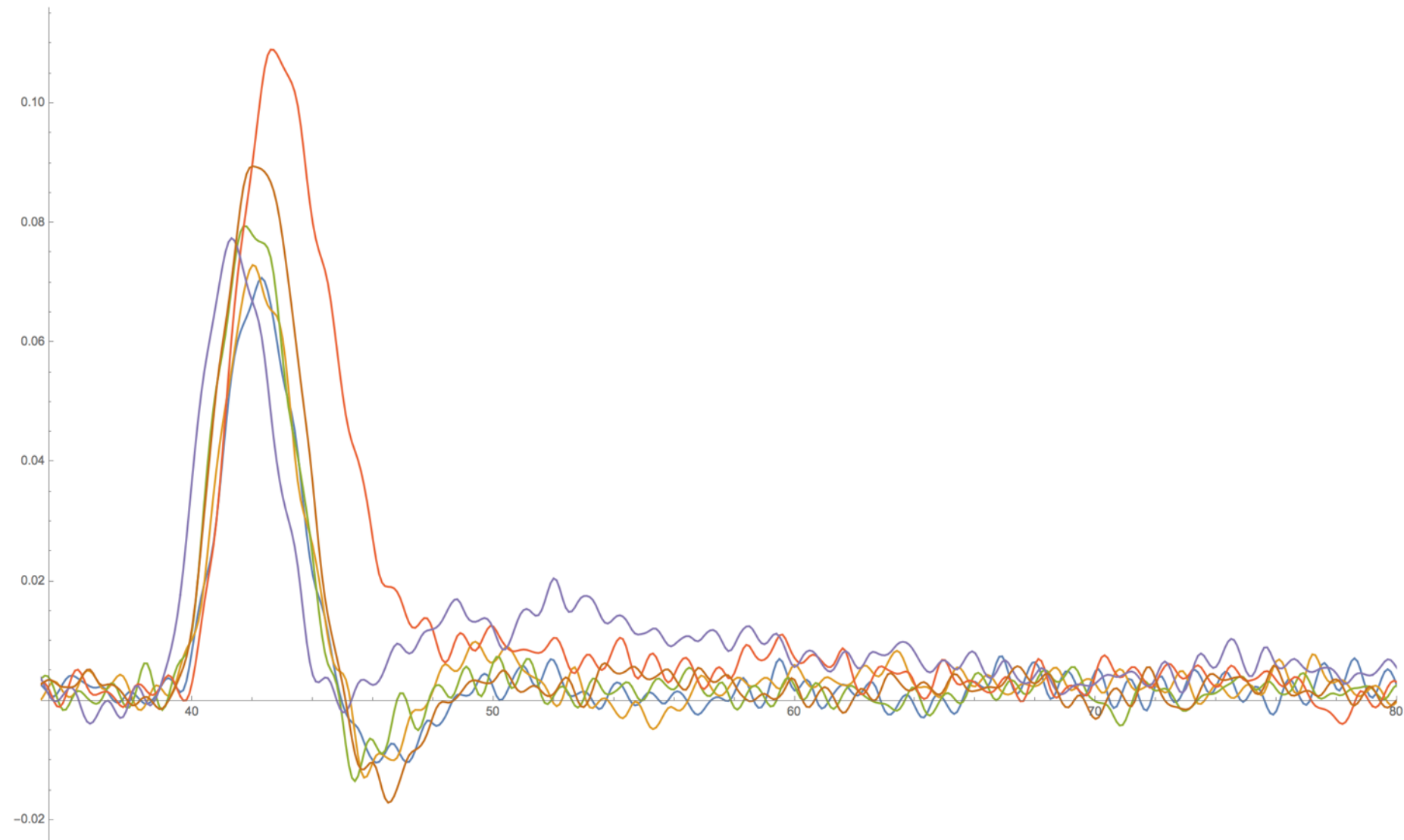


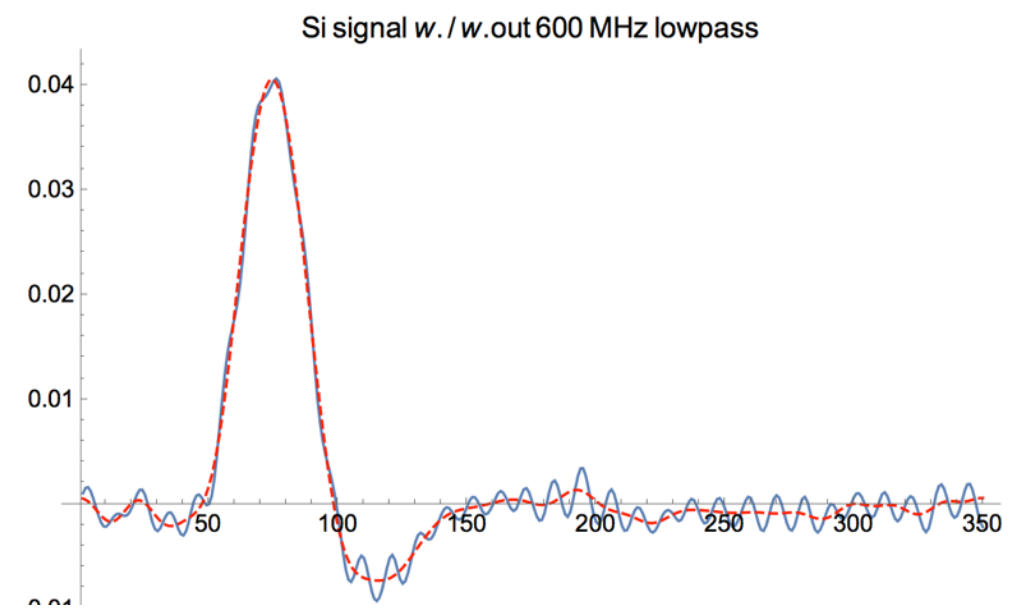
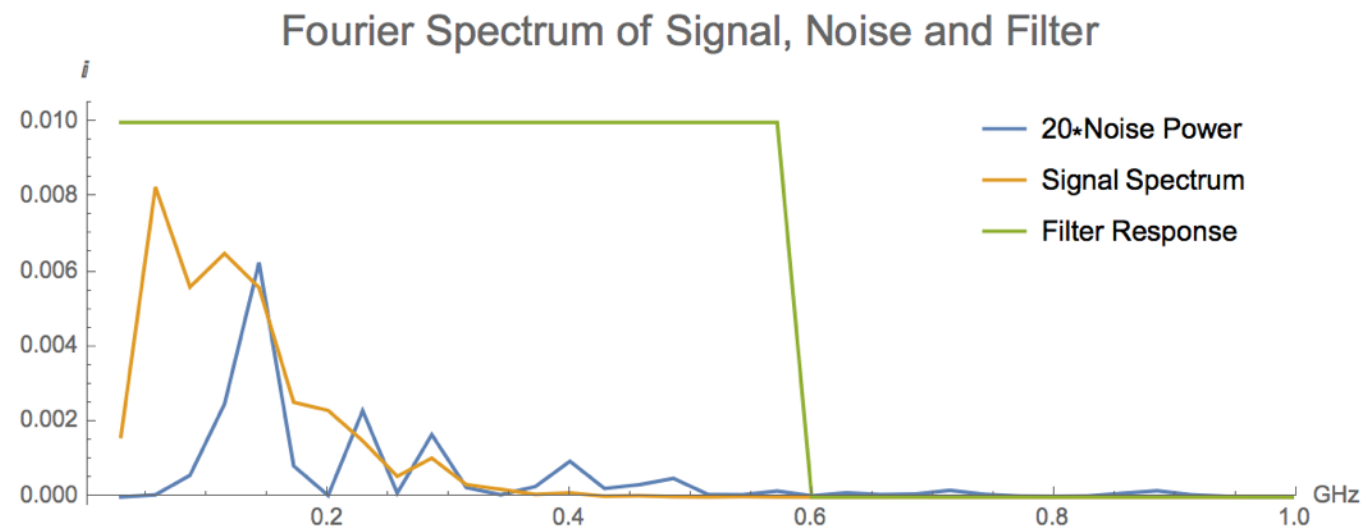
Cut in Signal amplitude at 77.35% efficiency reduces time jitter from 0.022641 to 0.00870866nsec

- will this cut be effective for our signal model?
- consider T10 data. 4 Si detector telescope data
- 1 detector “upstream” had significant 1GHz ripple. No harm in applying 600MHz low pass filter everywhere

First 350 bins (0 - 35 nsec) can be used for baseline and noise analysis.

```
ListPlot[{Transpose[{time, v4[[7]]}], Transpose[{time, v4[[8]]}], Transpose[{time, v4[[9]]}], Transpose[{time, v4[[10]]}],  
Transpose[{time, v4[[11]]}], Transpose[{time, v4[[12]]}]], Joined -> True, PlotRange -> {{35, 80}, Full}]
```





100000 - 20

Selection Criteria for initial scan :

1)remove spurious low ph triggers from Ch2 amplitude cut

2)remove Landau tail from all distributions

this results in a loss of statistics of a factor of ~3.

Not yet understood is the fact that round event 800 the timing of the Ch2(trigger) signal shifts earlier by 250 psec.

So, for the moment, we just work with the starting 800 events.

