Backup for Eraldo's RD51 talk

SNW-June 2, 2015

notes from discussion with Thomas and Ioannis today

N_photoelectron from bench(Thomas)

Estimation of number of photons:

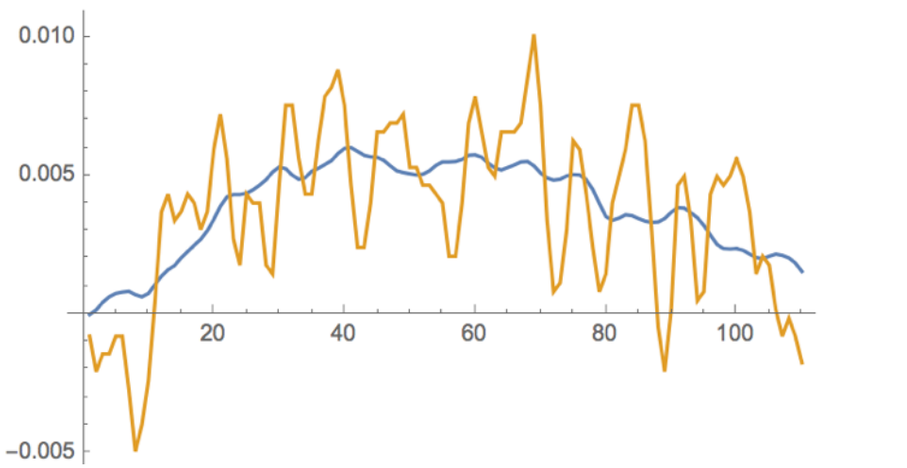
Measurement @ IRAMIS: signal ~1300 mV

Measurement with pulsed lamp @ SEDI: signal ~600 mV
Measurement with candle @ SEDI: <signal> ~30 mV

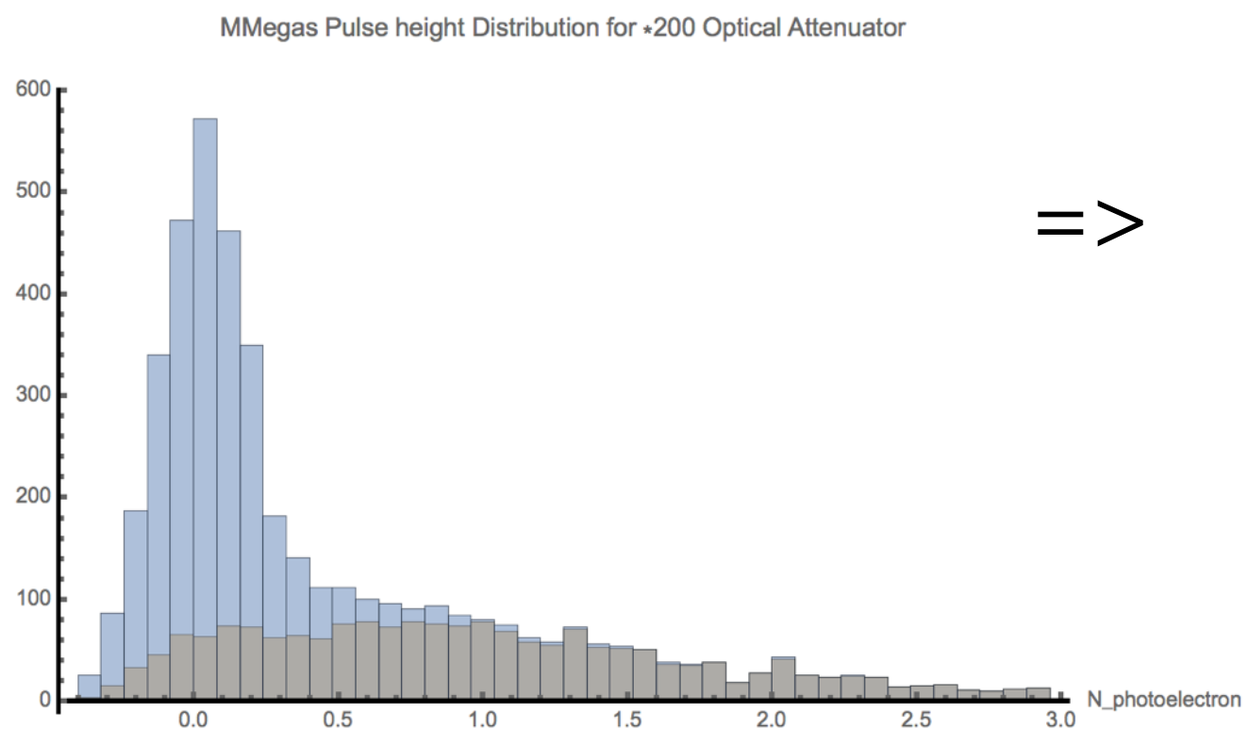
So, we concluded that we had around 20 photo_electrons at the lab and around 50 with the laser.

My estimate from/200 optical attenuator data

Effect of filtering on a typical waveform.



<= **single pe data are pretty noisy**
looks like digital noise dominates
next time need higher sampling
also setting scope to lower scale would have reduced this



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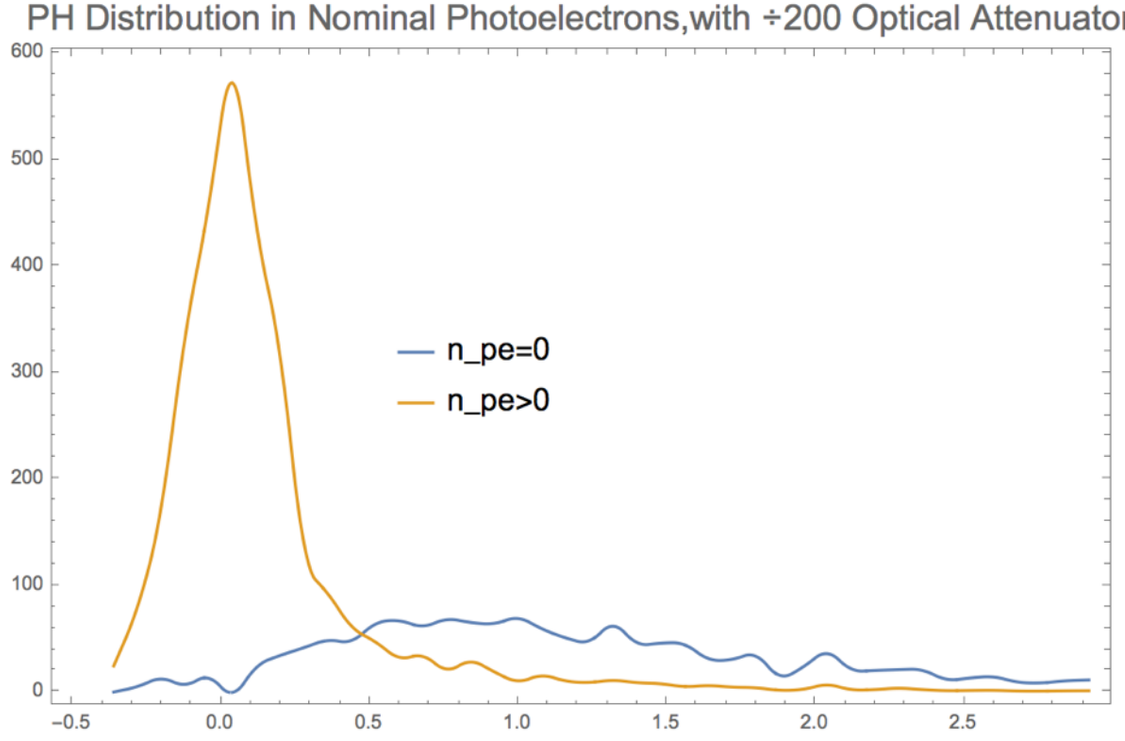
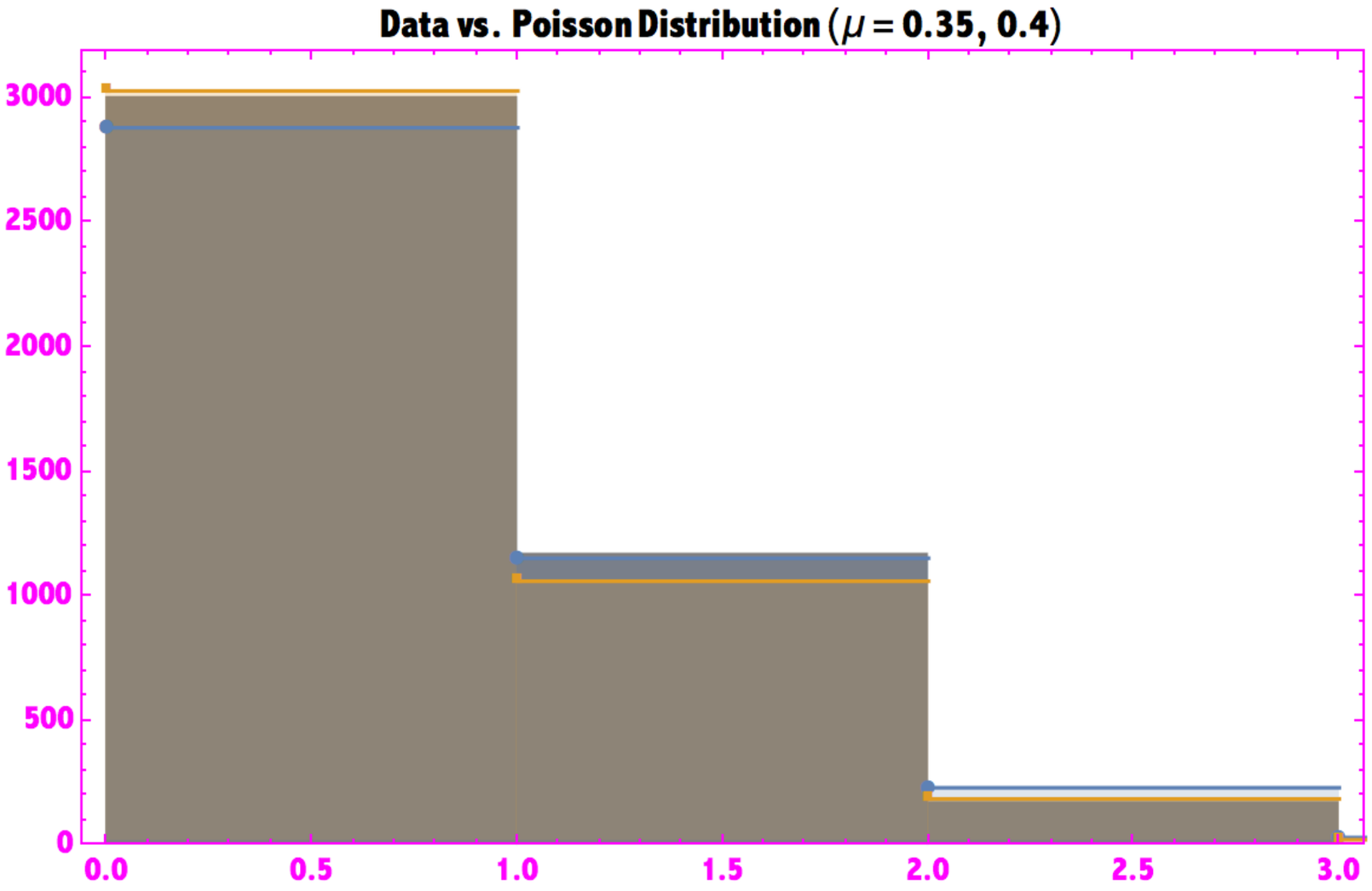


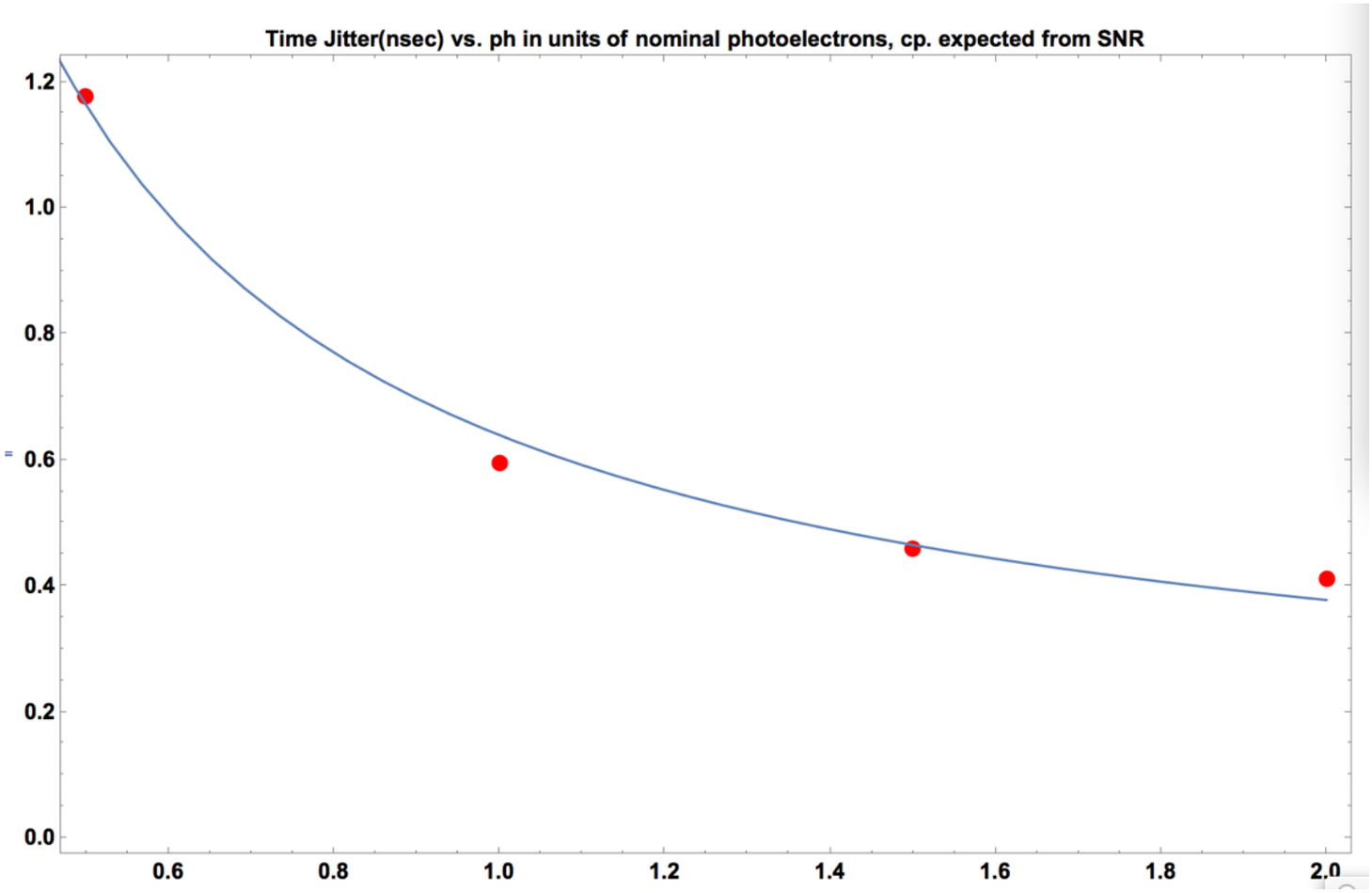
Photostatistics from attenuator data



This plot shows extracted N_pe distribution
It is compared to expectation for mean of 0.35 and 0.4

correcting for the /200 attenuator we find N_pe~60 for normal running with no attenuator
We consider this to be consistent with the ~50 result obtained by Thomas

Jitter on Single pe



using the same timing algorithm
as I used for jitter at ~50 pe
we are noise dominated as shown
here.

more aggressive fitting/filtering
is giving closer to expected diffusion
dominated jitter @1pe
ie ca.~220 psec