

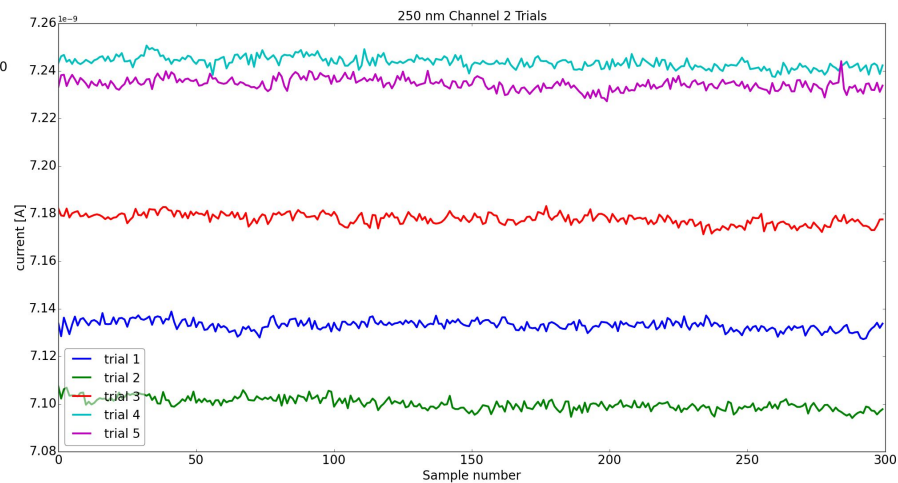
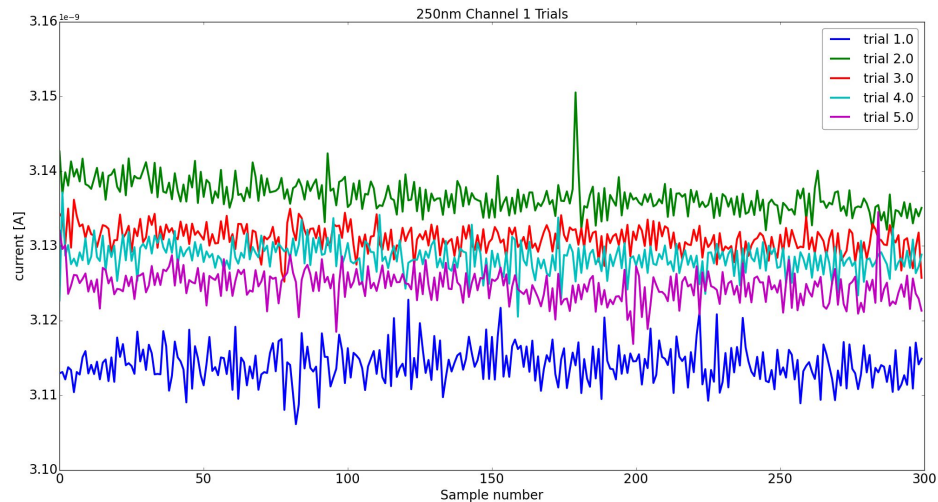
Weekly Update

March 7, 2018

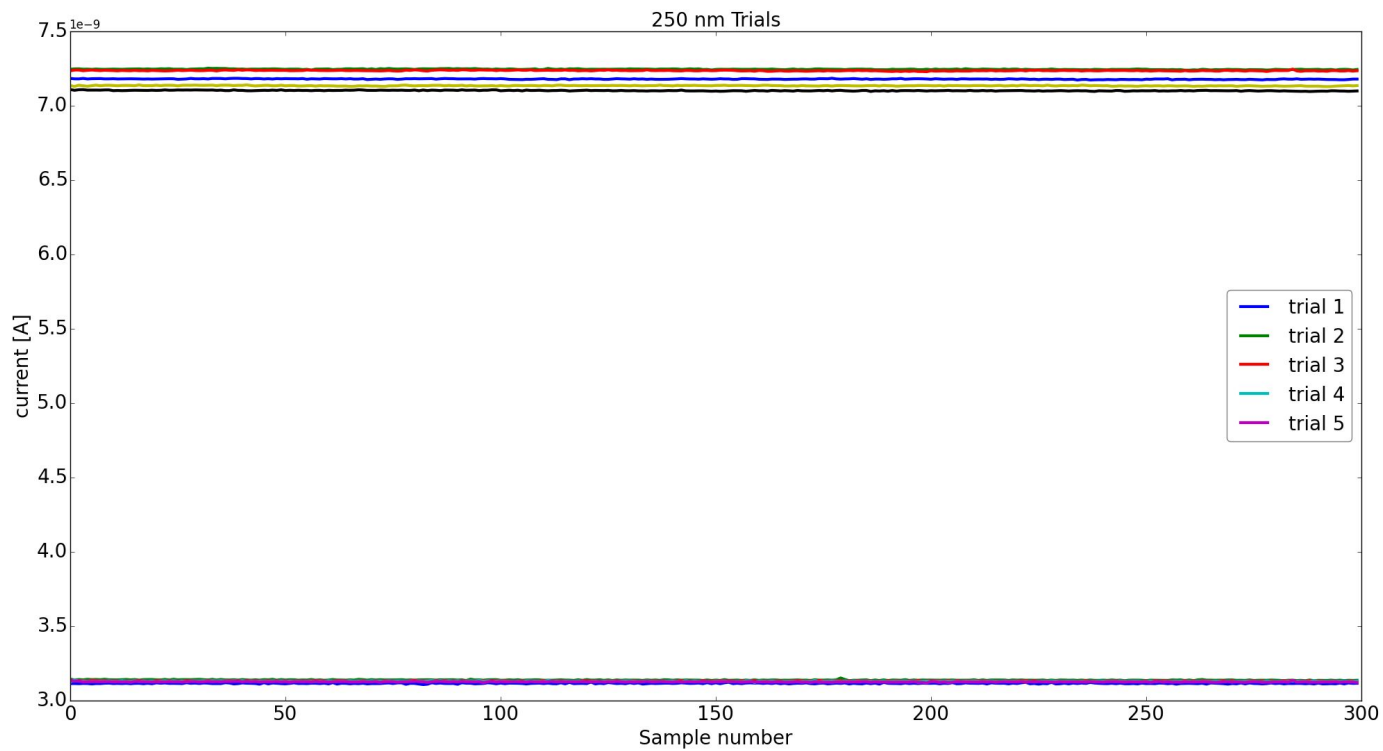
Several Improvements

- The amount of light entering channel 1 has been improved; more light entering means less sensitive to low level noise
- Tried covering the gaps with a black cloth; to avoid random light to enter... don't think it works that well, still getting some spurious light as you will see later
- All trials has been done with the monitor of the computer off so the light from the monitor won't affect the trials

250 nm



250 nm



250 nm RMS

The rms of channel 1 trials are 2.54269679613e-12

The rms of channel 2 trials are 2.05934978188e-12

The rms of channel 1 trials are 2.15105851403e-12

The rms of channel 2 trials are 2.44181734151e-12

The rms of channel 1 trials are 1.70304880748e-12

The rms of channel 2 trials are 2.30876547053e-12

The rms of channel 1 trials are 2.00013228291e-12

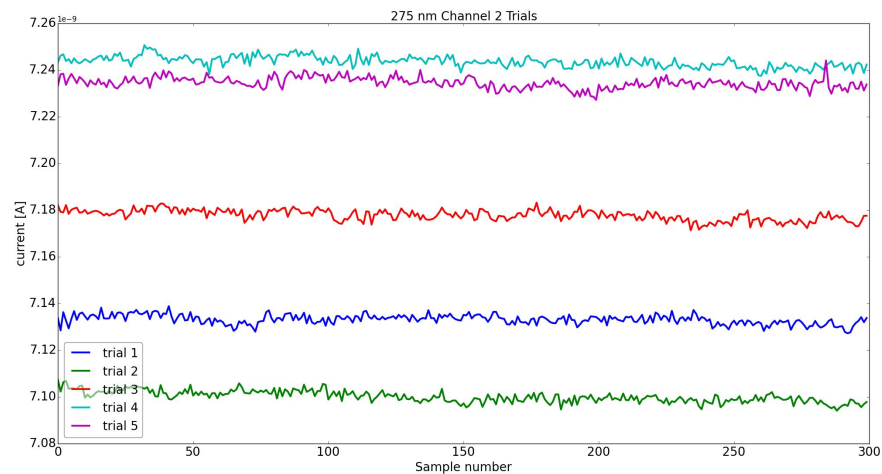
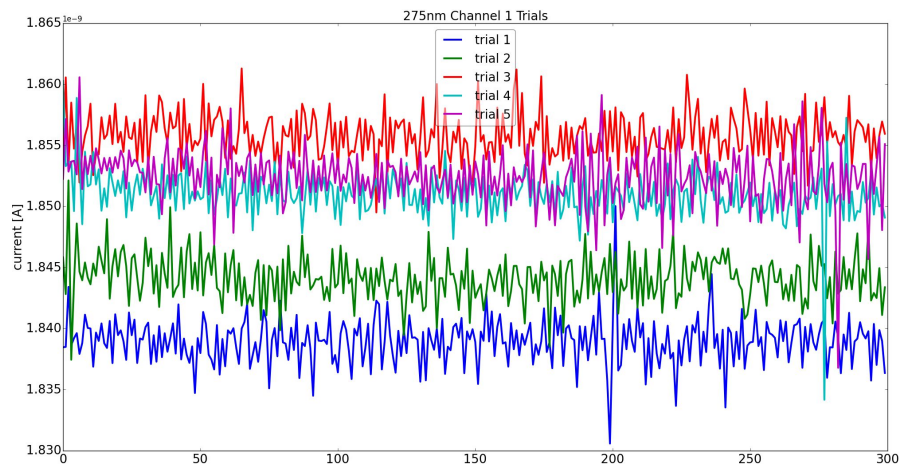
The rms of channel 2 trials are 2.32897384723e-12

The rms of channel 1 trials are 2.07473367679e-12

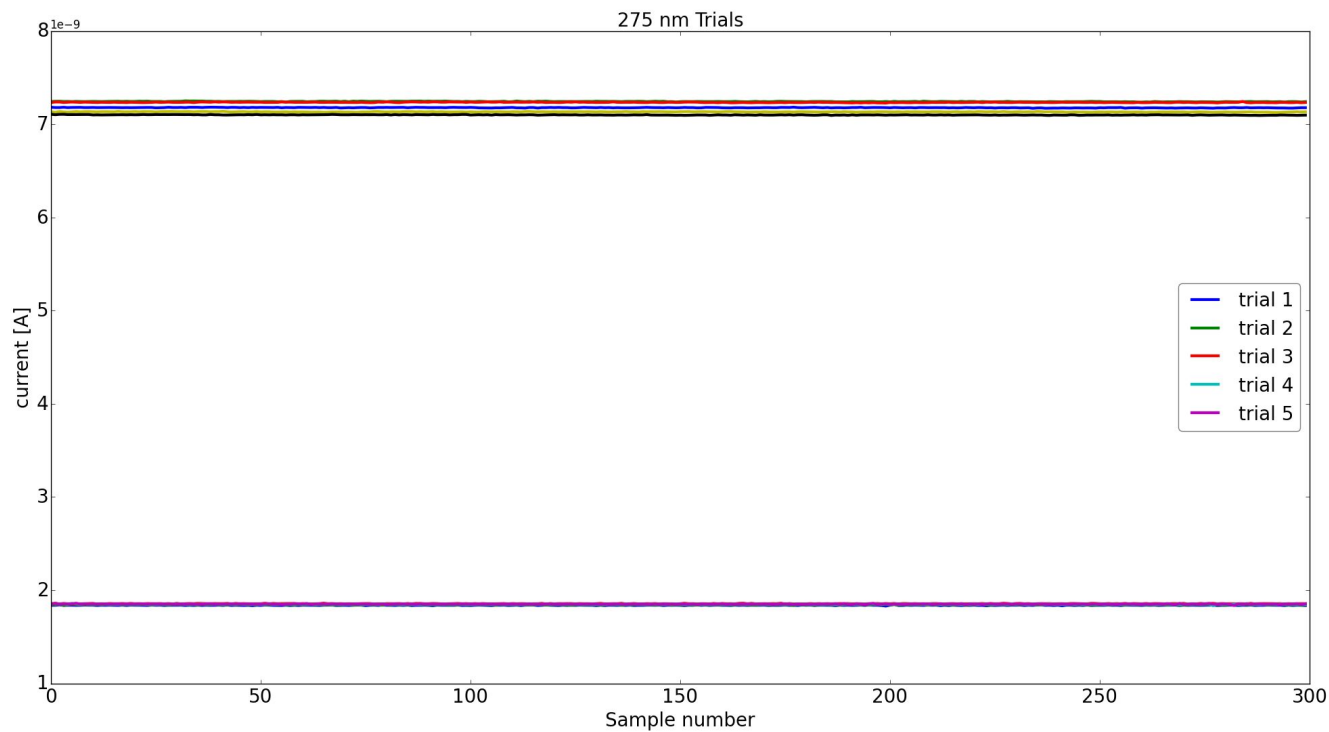
The rms of channel 2 trials are 2.4200120306e-12

- Also did a compared average with each point; condition: < 1%?
- Trial 2: spike at around 180 is still within 1%!
 - 1% is 3.16802685923e-09 A

275 nm



275 nm



275 nm RMS

The rms of channel 1 trials are 1.88050358024e-12

The rms of channel 1 trials are 1.91895152705e-12

The rms of channel 1 trials are 1.88026581422e-12

The rms of channel 1 trials are 1.95652695474e-12

The rms of channel 1 trials are 2.32017259027e-12

The rms of channel 2 trials are 2.05934978188e-12

The rms of channel 2 trials are 2.44181734151e-12

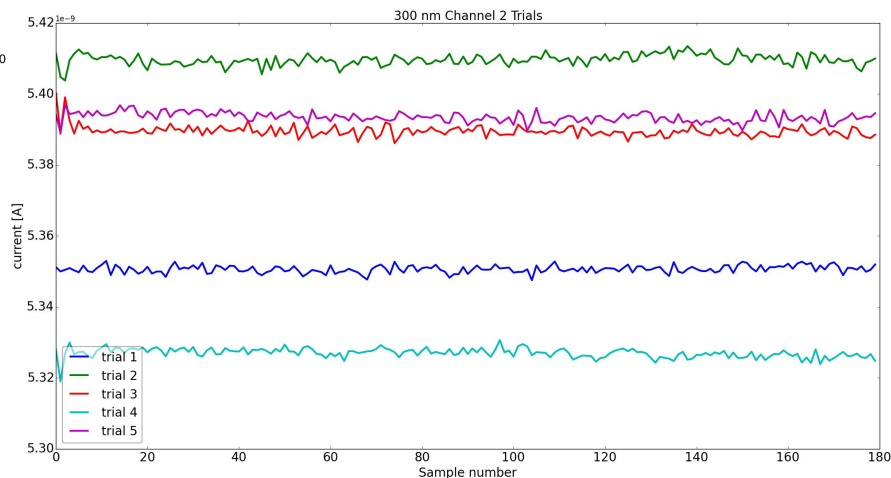
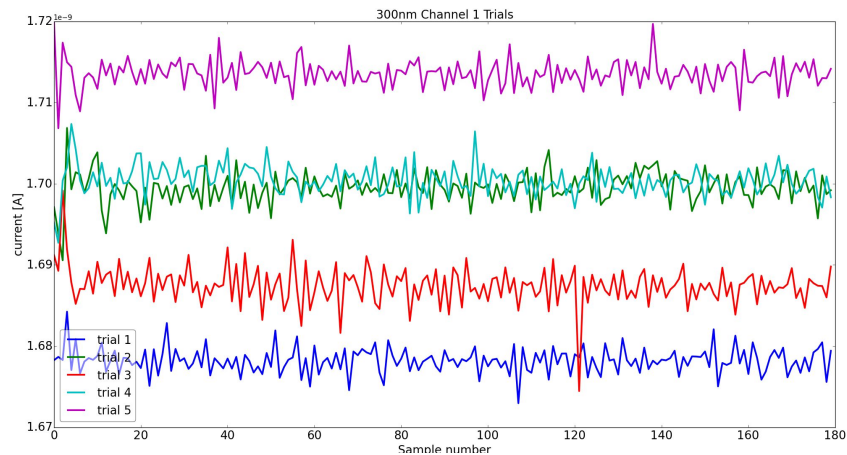
The rms of channel 2 trials are 2.30876547053e-12

The rms of channel 2 trials are 2.32897384723e-12

The rms of channel 2 trials are 2.4200120306e-12

- All points within 1% of the average

300 nm



300 nm RMS

The rms of channel 1 trials are $1.56105341225e-12$

The rms of channel 1 trials are $1.99543072422e-12$

The rms of channel 1 trials are $2.34522032383e-12$

The rms of channel 1 trials are $1.88517925562e-12$

The rms of channel 1 trials are $1.78104125339e-12$

The rms of channel 2 trials are $1.04708344337e-12$

The rms of channel 2 trials are $1.54023347761e-12$

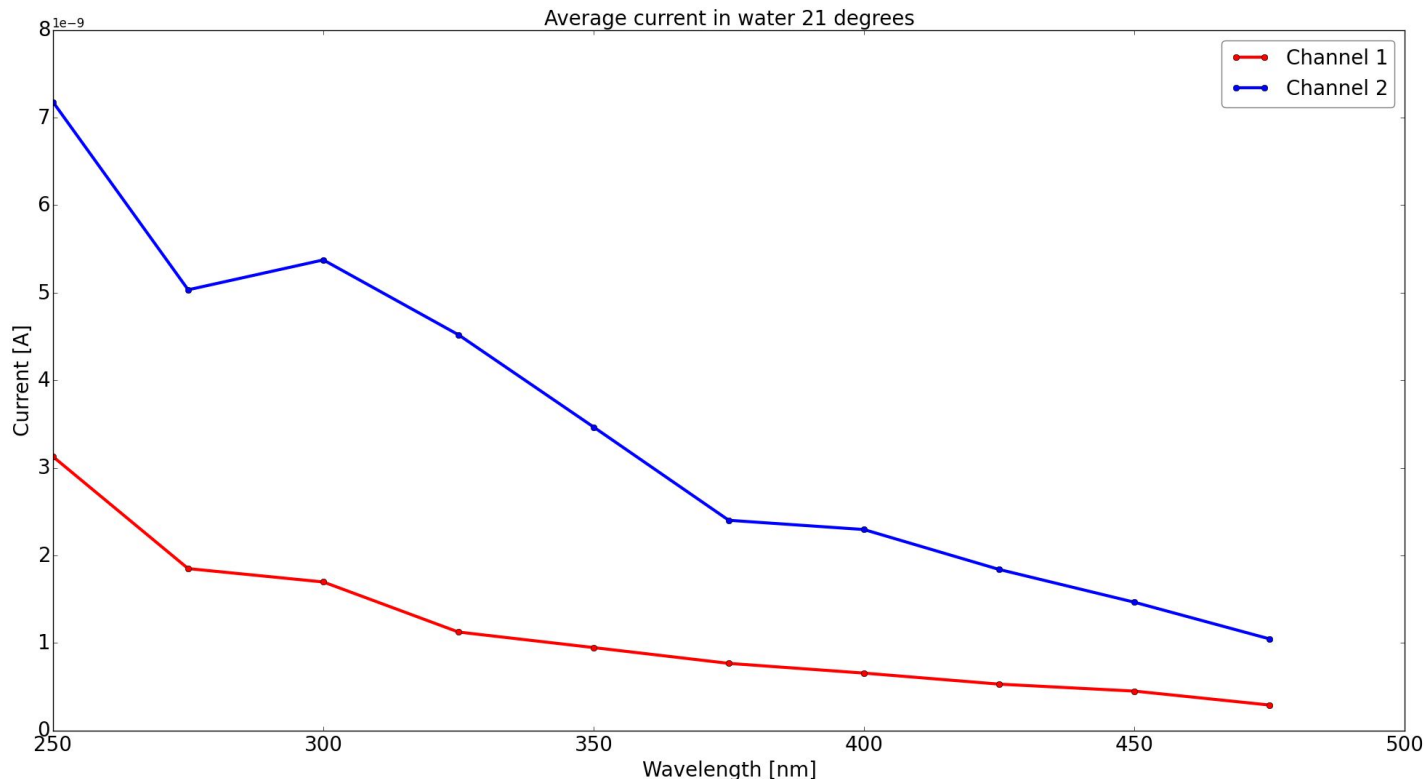
The rms of channel 2 trials are $1.5860692804e-12$

The rms of channel 2 trials are $1.33317940976e-12$

The rms of channel 2 trials are $1.38444145509e-12$

- All within 1%

Channel 1 and 2 over all wavelengths



Things to do

- Finish analysis for all wavelengths for this sample
- Switched from 5 minutes (300 samples) to 3 minutes (180 samples)
 - Worth shortening it down to 1 minute for the sake of time?
- Want to compare channel 2 - channel 1 and compare between all trials and see the variation there
- Don't think I need anymore warmup analysis but will continue to monitor it ie) take data
- Move onto next samples and do comparison and try to get a transmission % for next week
- How will the error work when I plot the whole thing?
 - Average - each data points and average that?