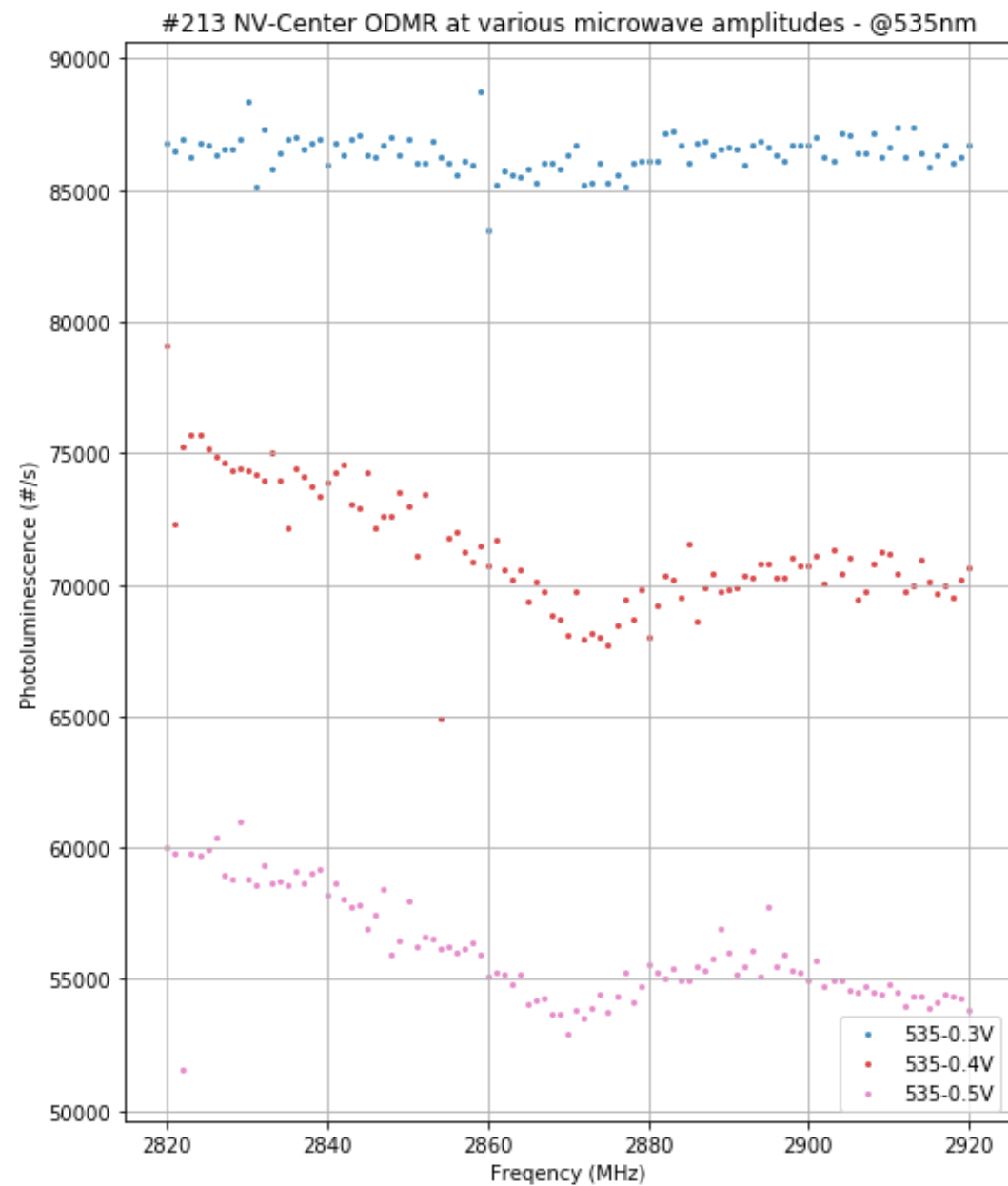
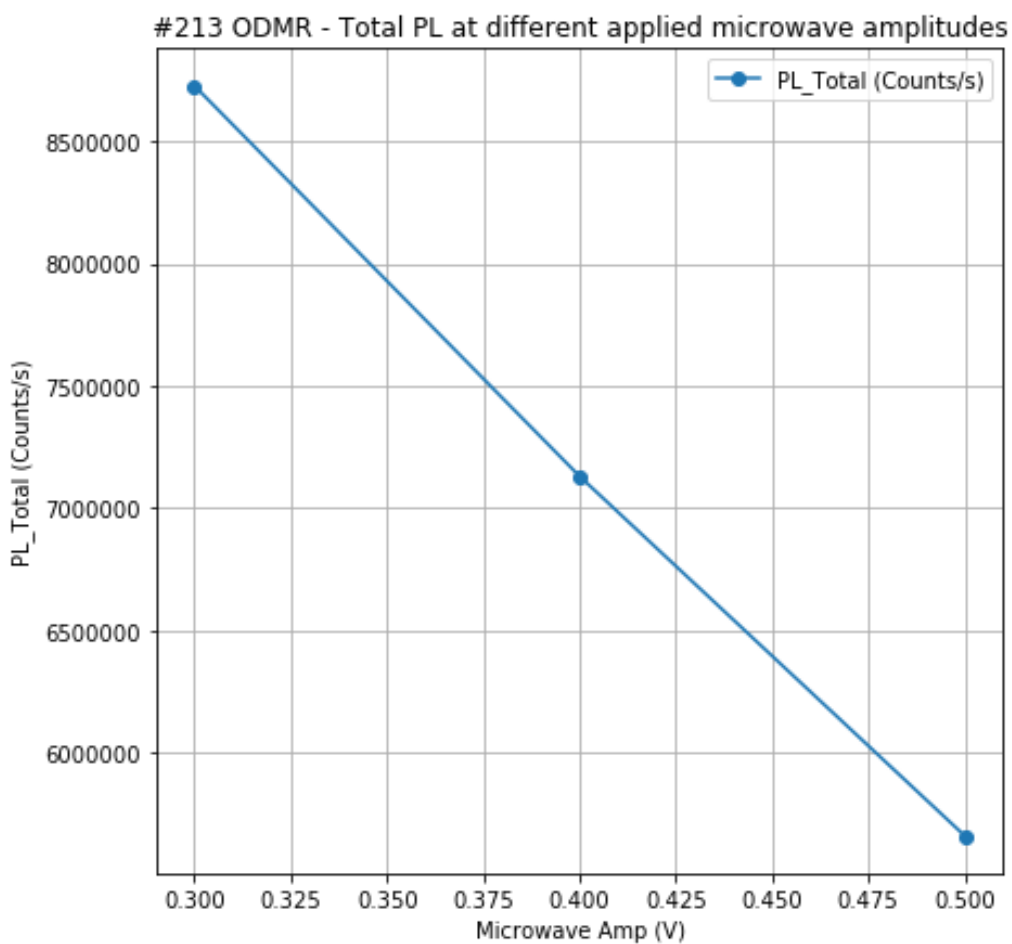
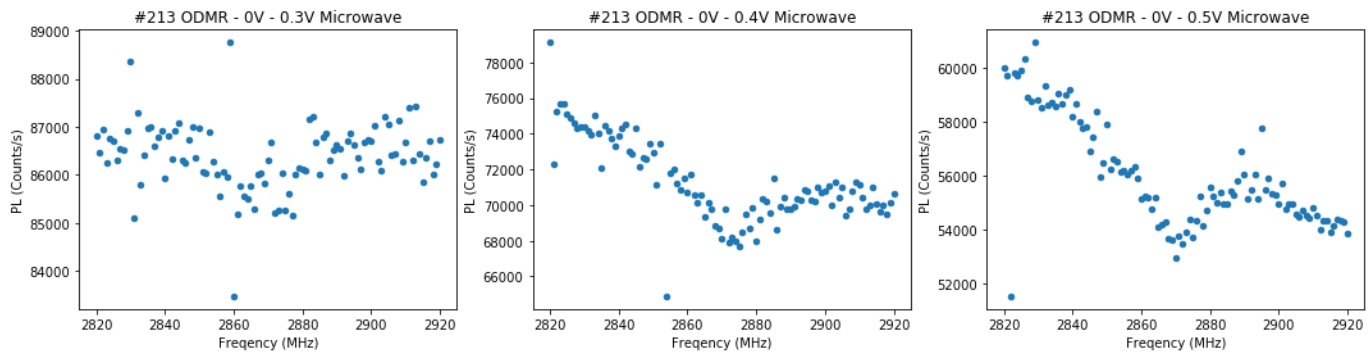
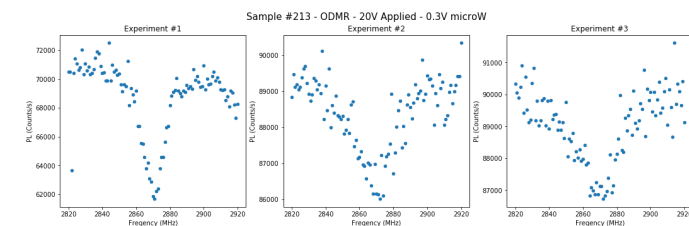
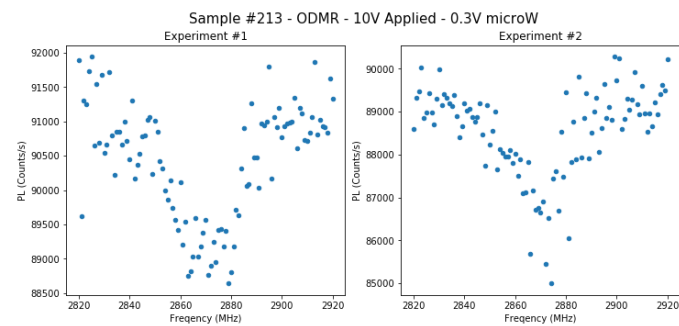
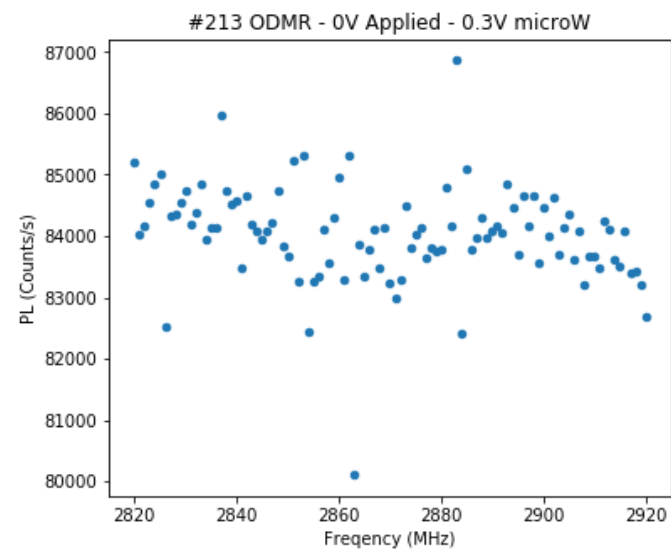




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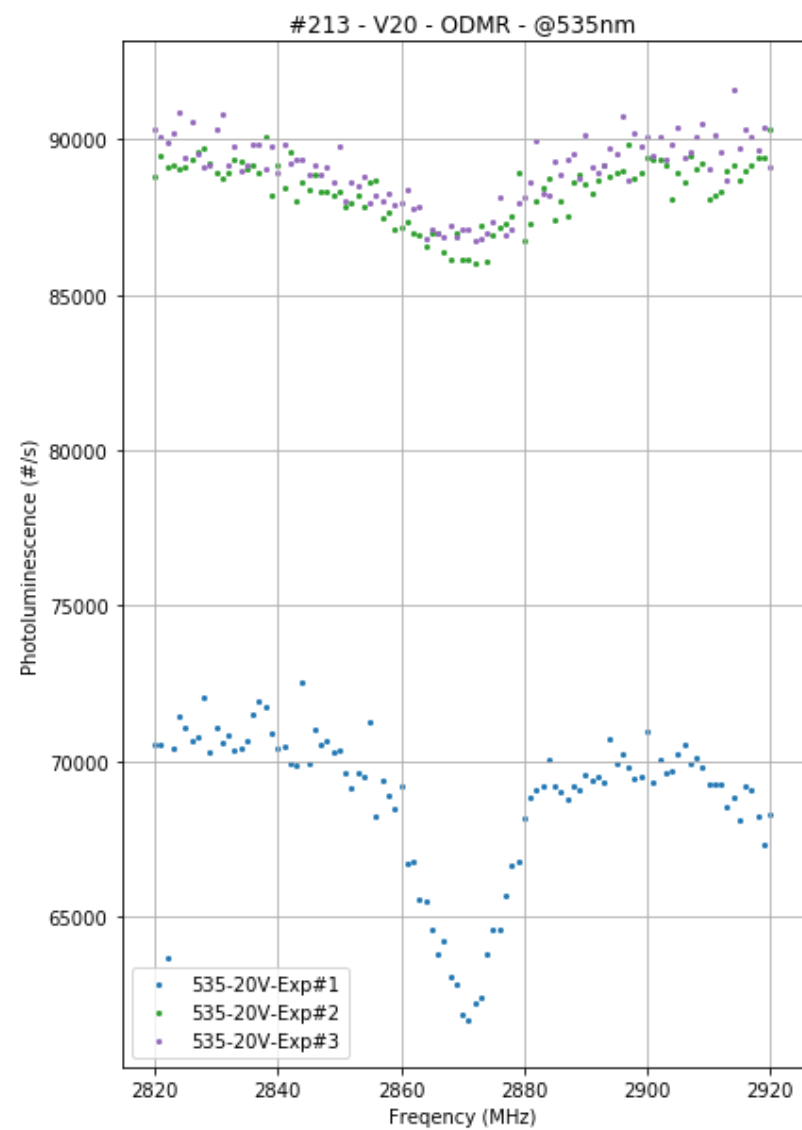
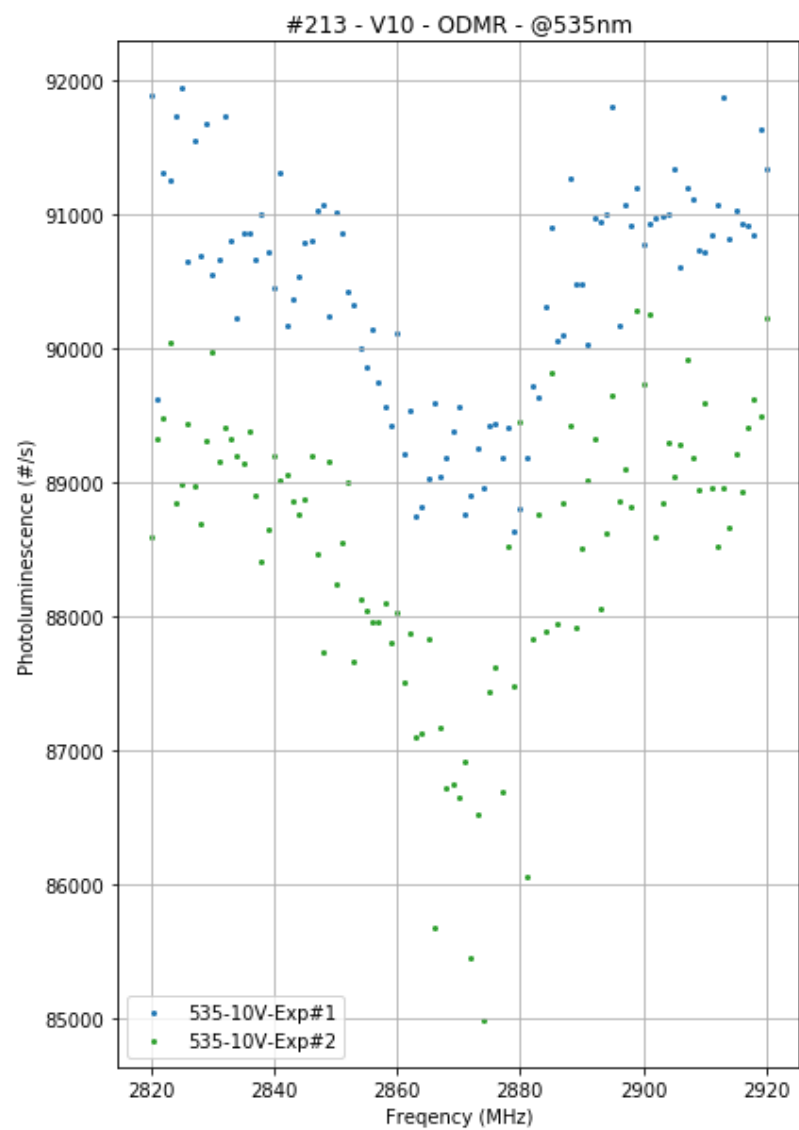
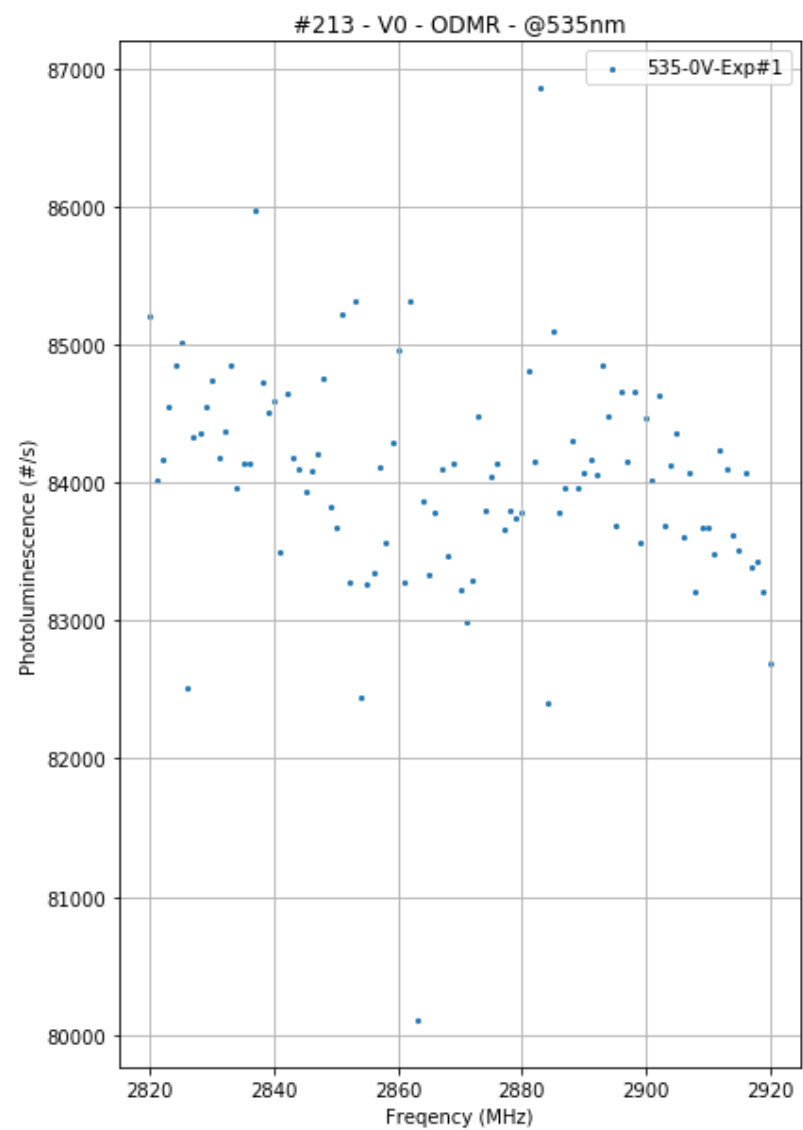
Nitrogen Vacancy Single Point Defects



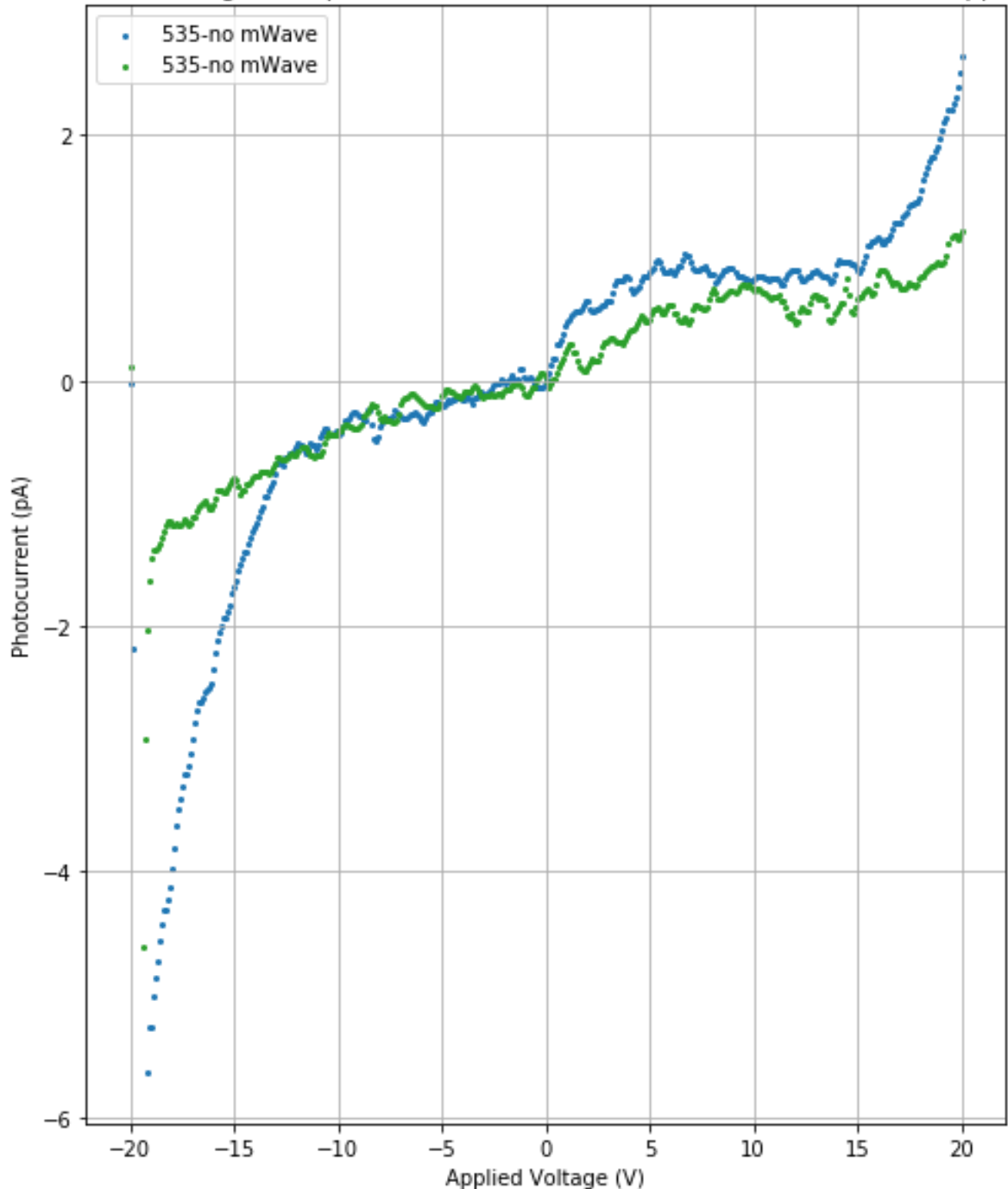


#213 NV-Center ODMR at various applied voltages - @535nm

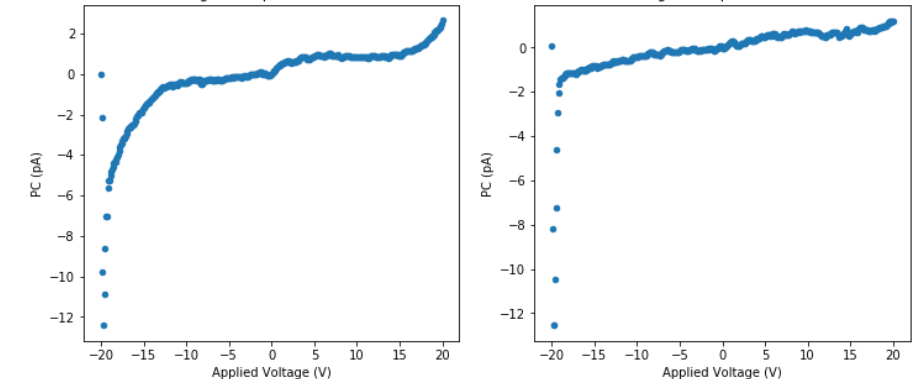




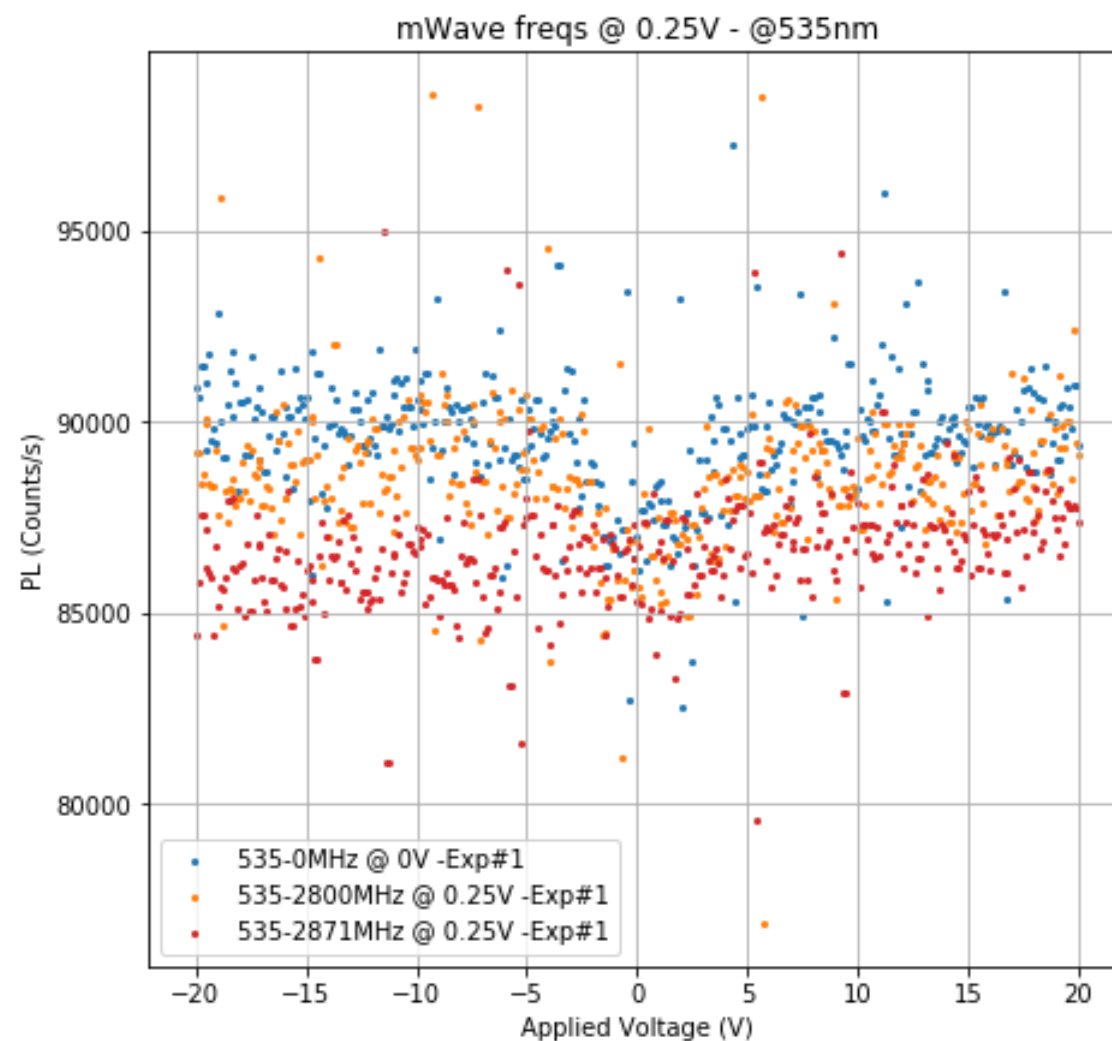
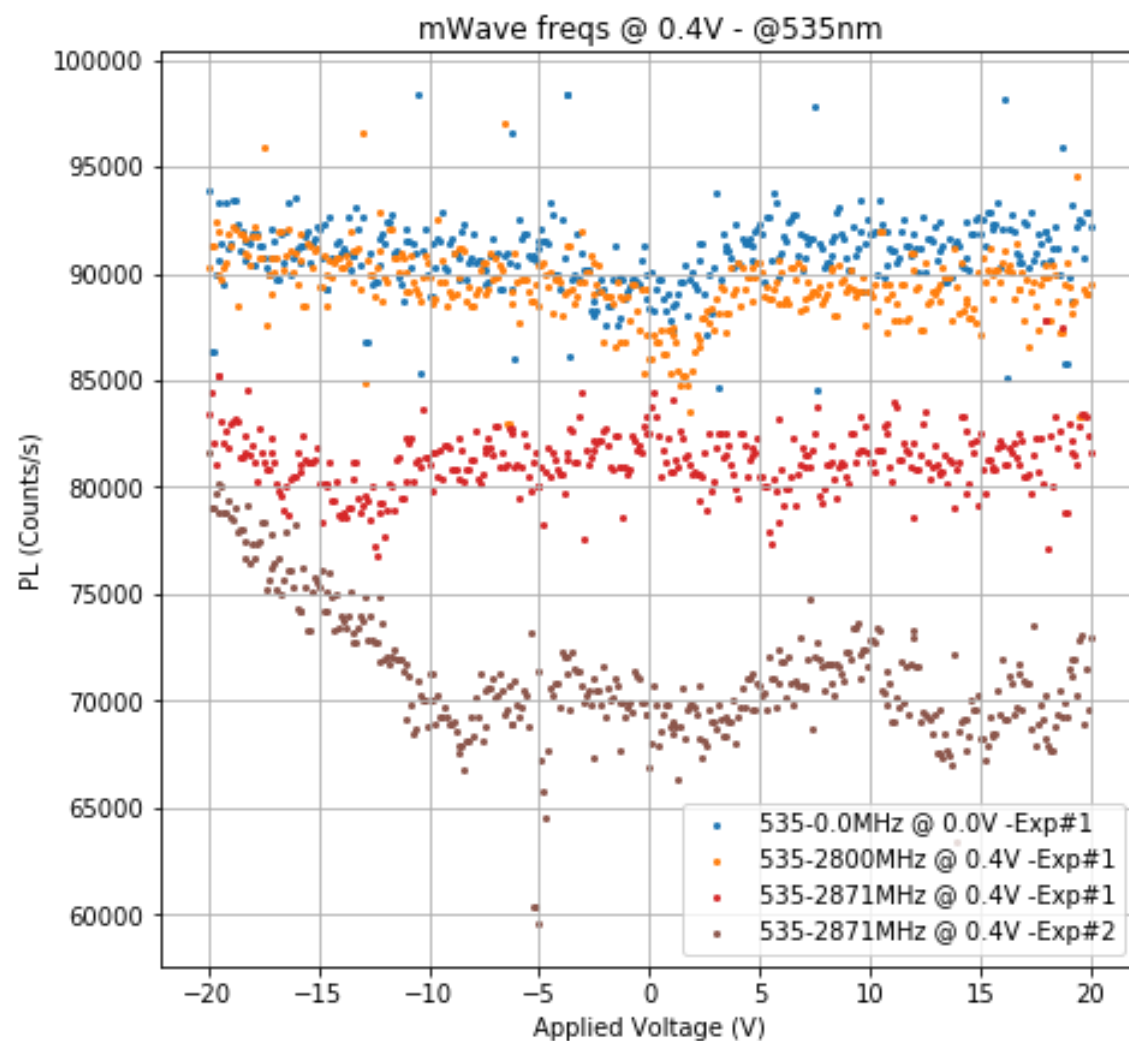
Sample #213 - PC - Voltage Sweep - At resonant 2871MHz microwave, and without applied microwave



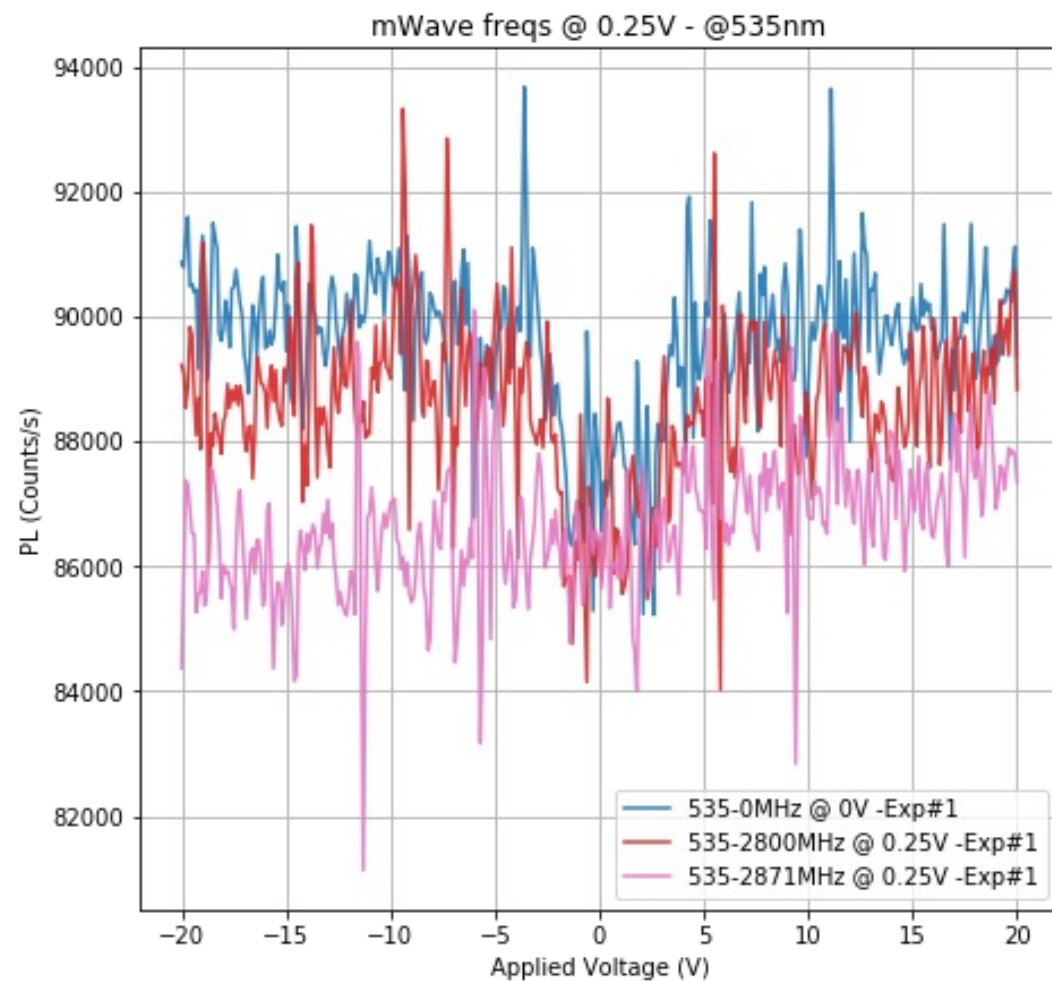
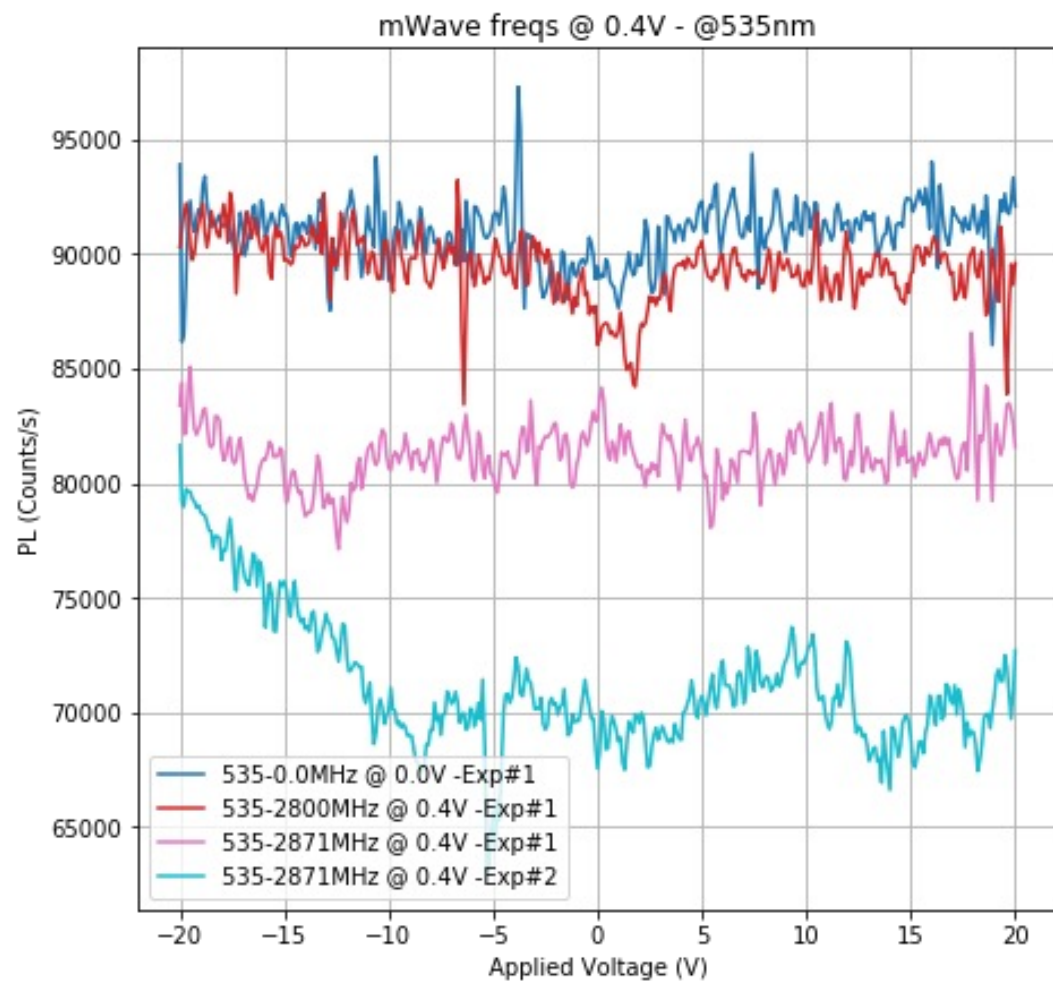
Sample #213 - PC - Voltage Sweep - At resonant 2871MHz microwave, and without applied microwave



#213 NV-Center - Voltage Sweep at and around resonant mWave freqs @ 0.25V - @535nm

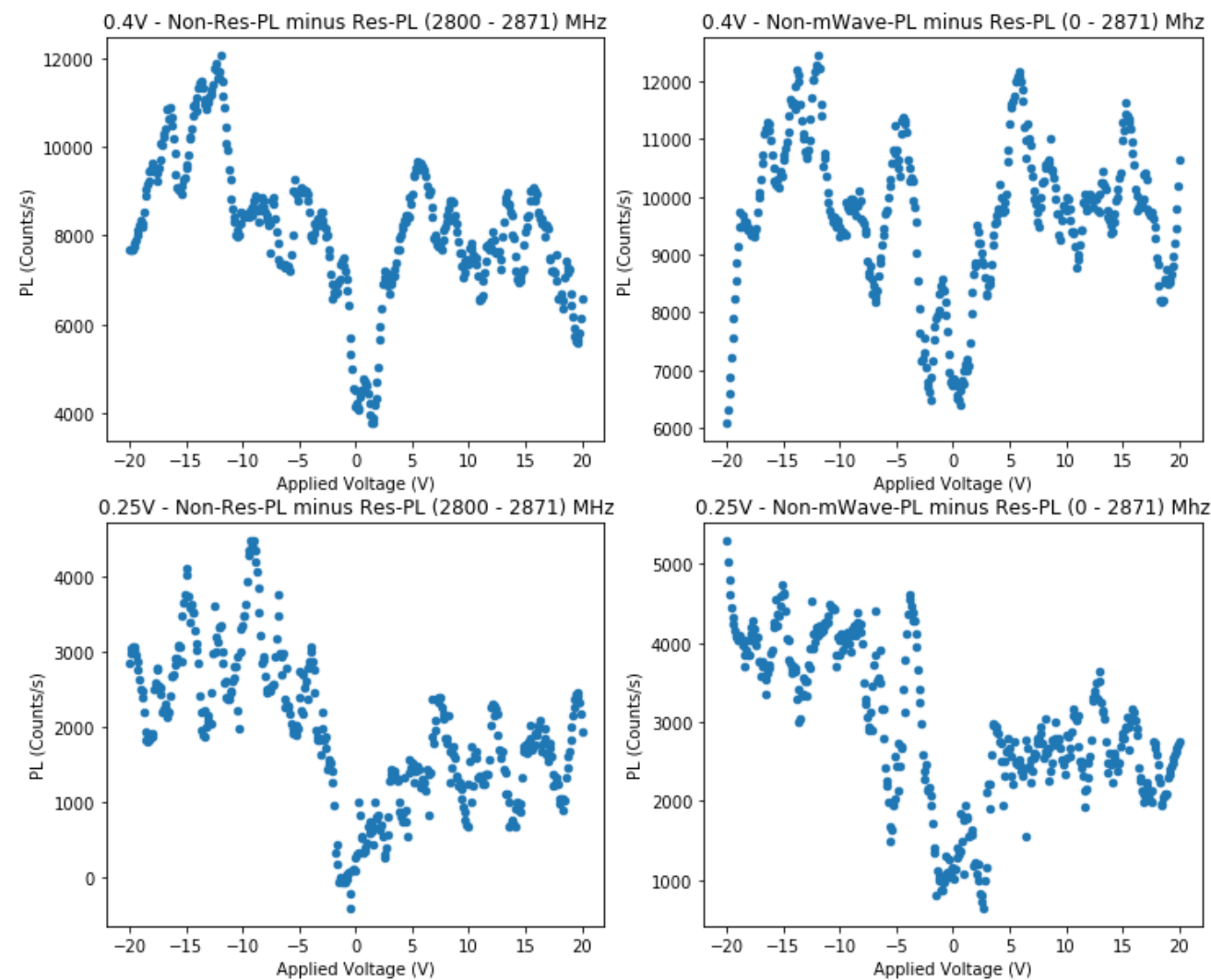


#213 NV-Center - Voltage Sweep at and around resonant mWave freqs @ 0.25V - @535nm

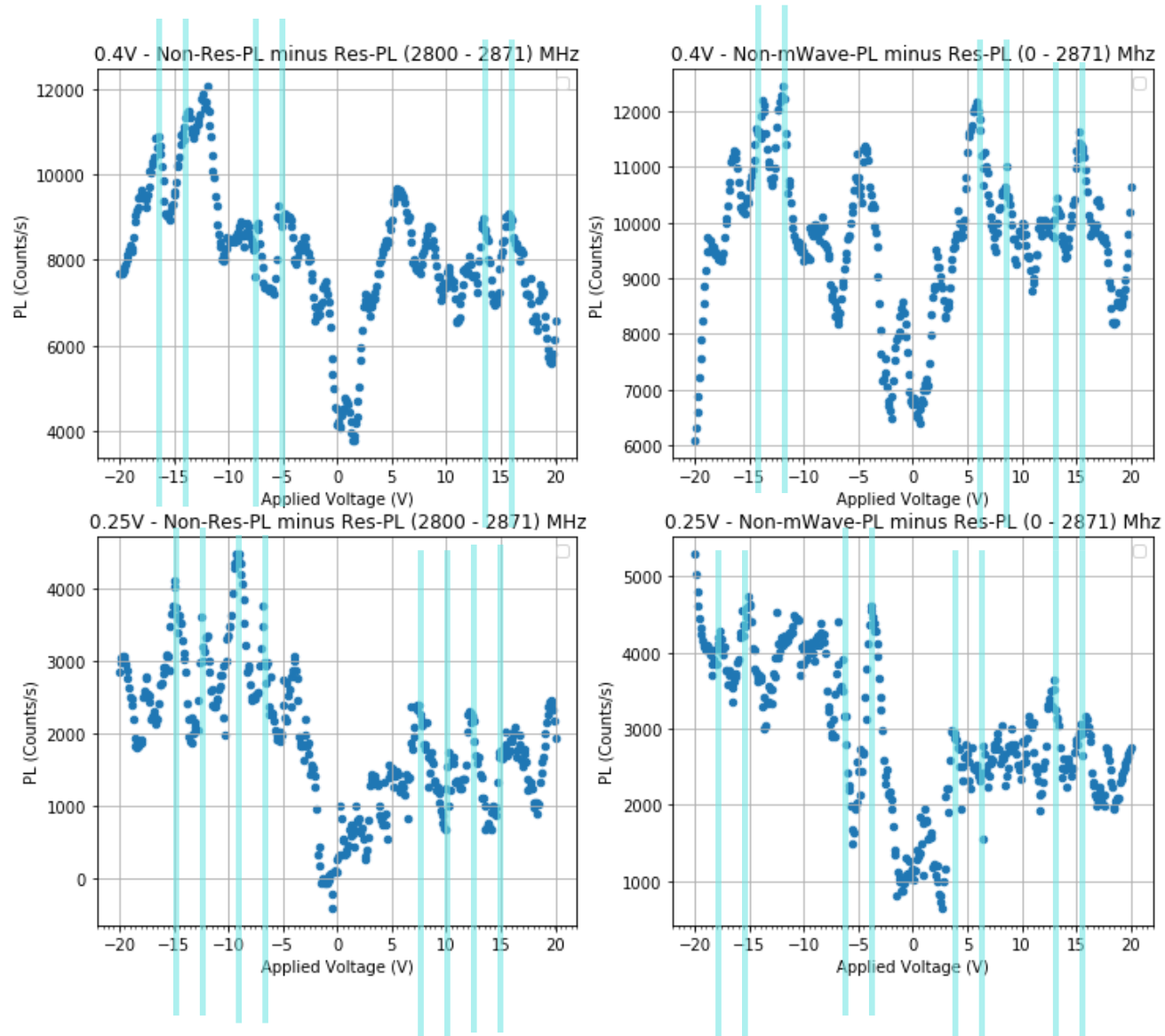


Smoothed Voltage Sweep at & around resonant microwave frequency

#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



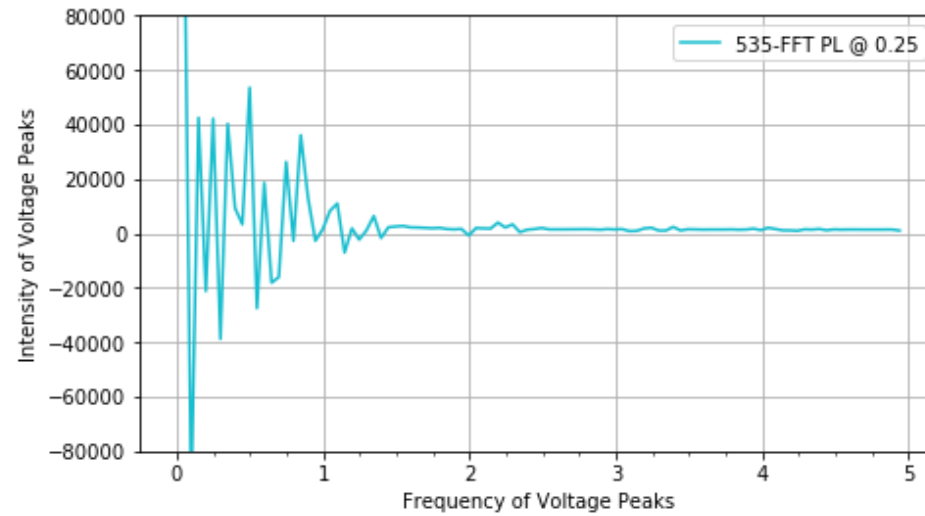
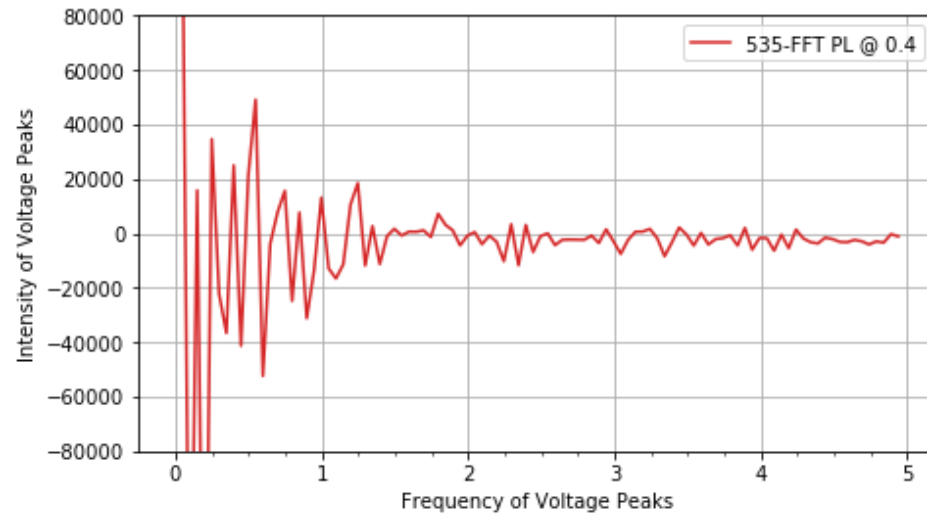
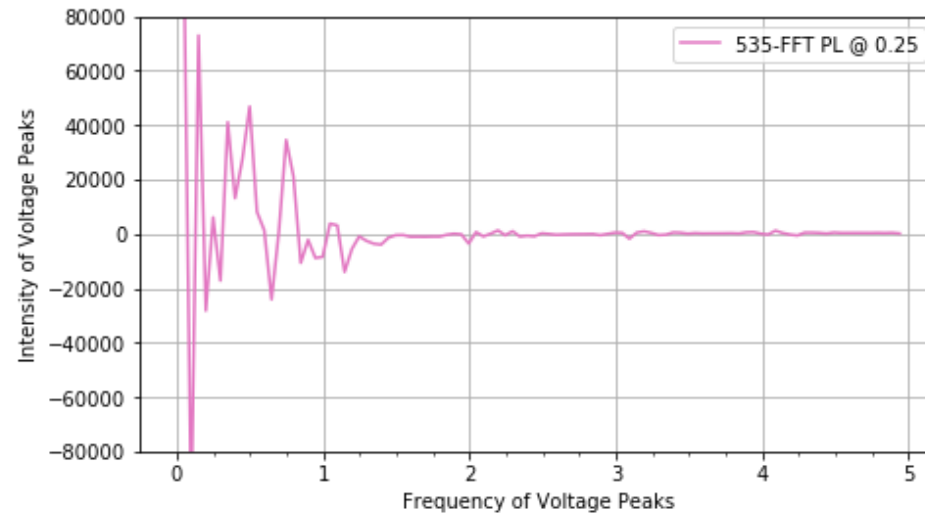
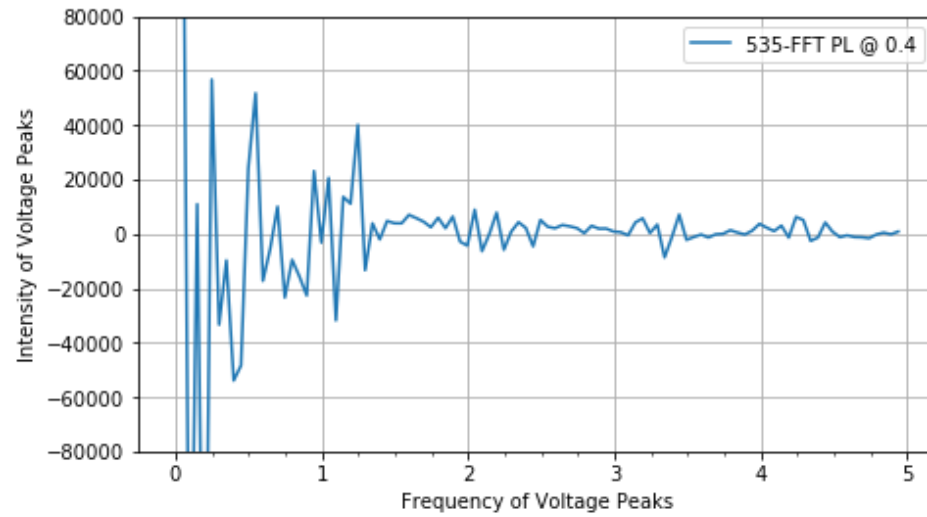
Notice how the peaks are evenly spaced.

Their distance is
 3 ± 0.10 V

Is the sample vibrating?
Is this a smoothing artefact?

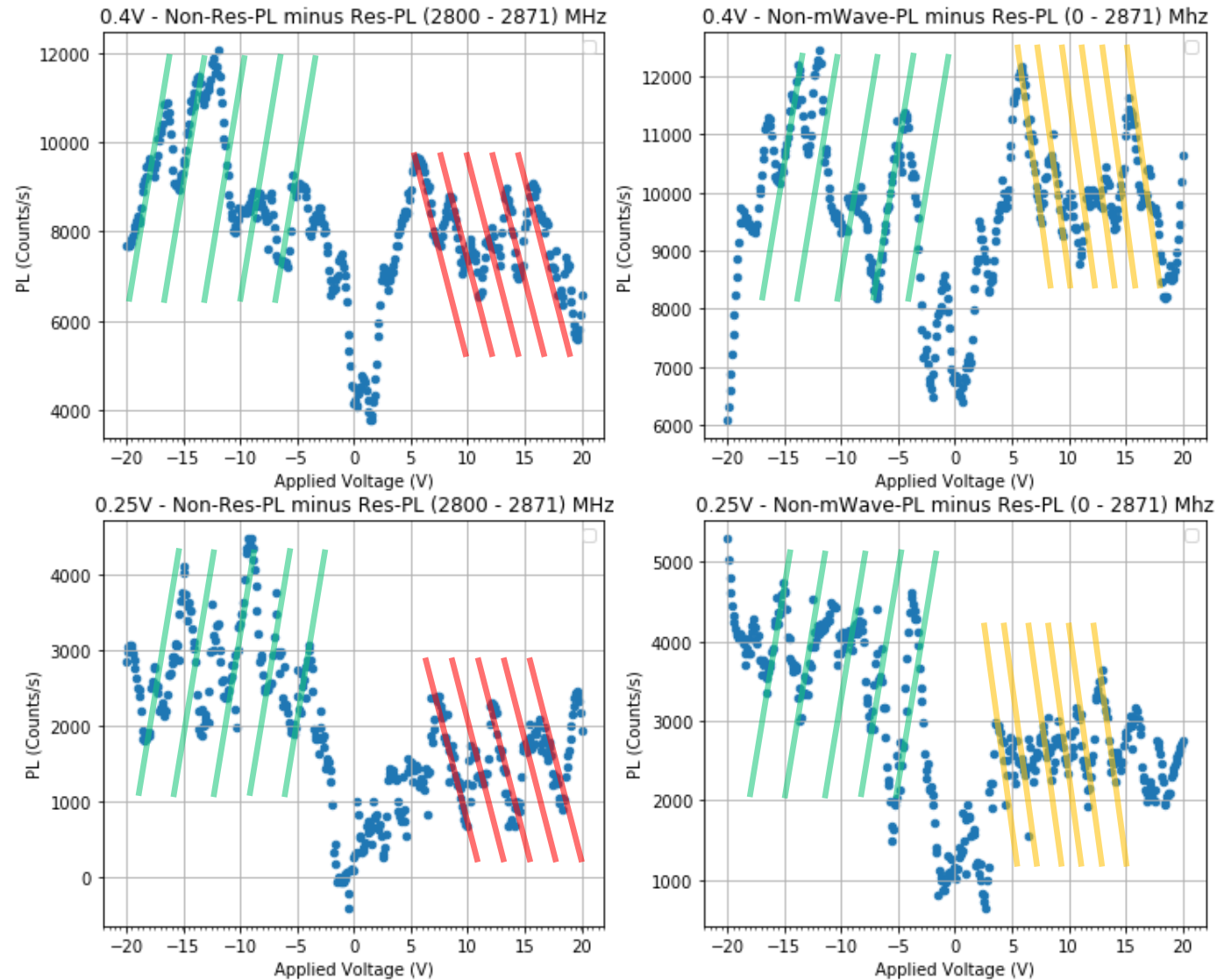
FFT Analysis to determine if there's periodicity in how PL moves up or down as V sweeps

#213 NV-Center - FFT of Voltage PL - @535nm



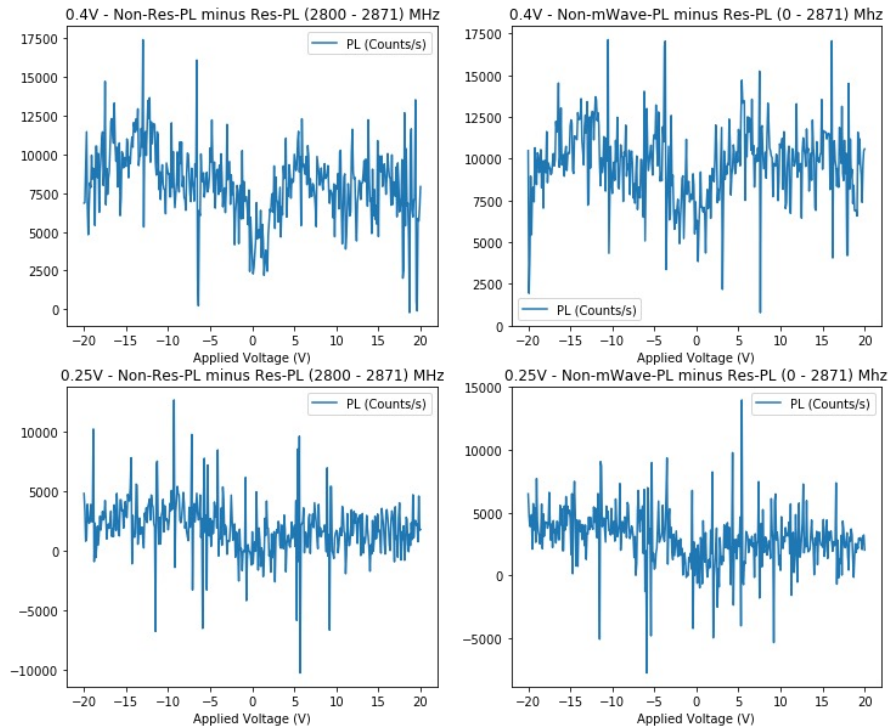
We're noticing a sawtooth pattern emerging. Might be a smooth artefact, but perhaps not?

#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



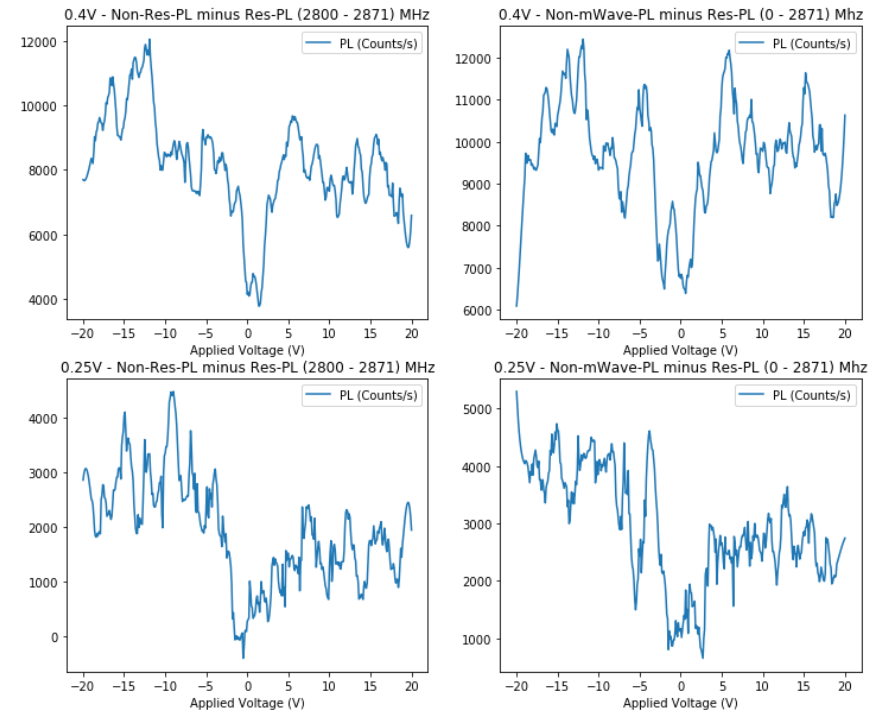
Unfiltered

#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



Filtered 21 – 3 Polynomial

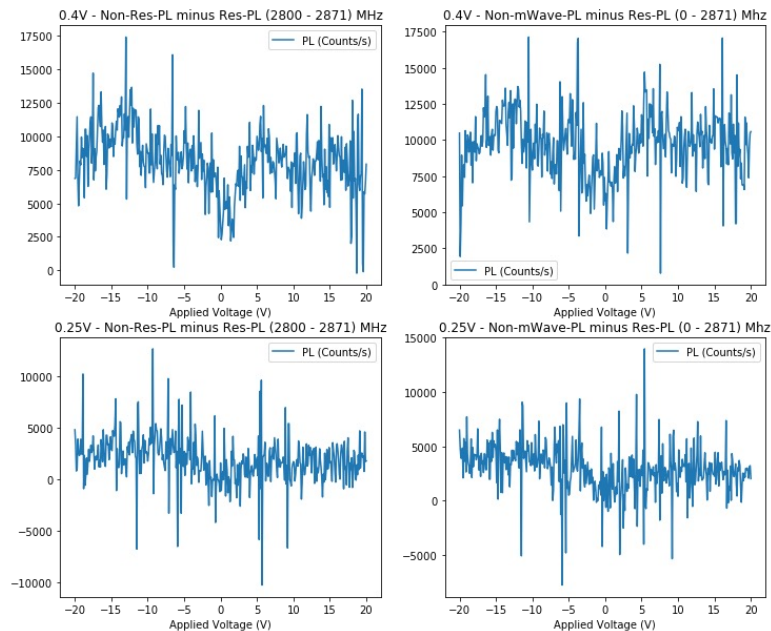
#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



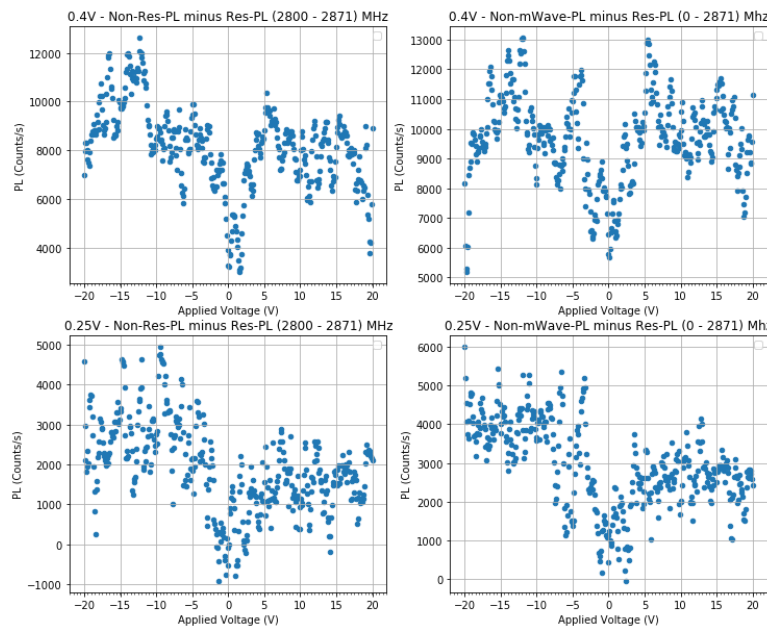
For comparison sake, here's the noisy data, and filtered using Savitzky–Golay

Unfiltered

#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



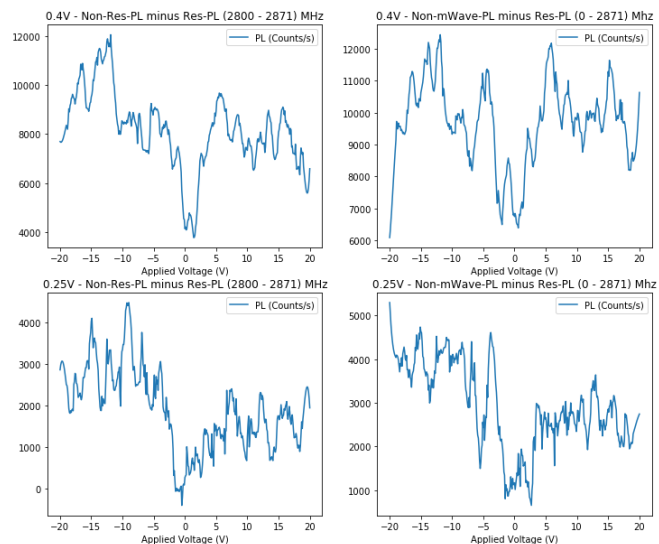
#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm



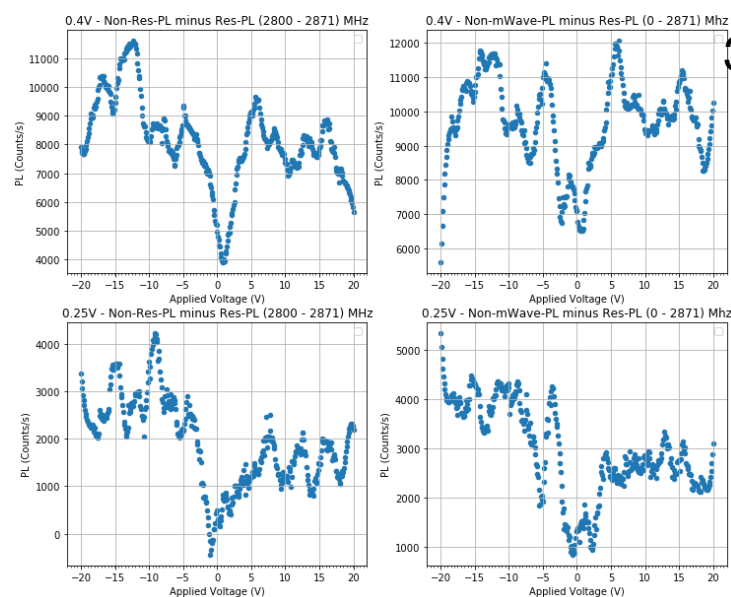
Filtered
11 Sample Window
– 3 Polynomial

#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm

#213 NV-Center - Smoothed Voltage Sweep at and around resonant mWave freqs- @535nm

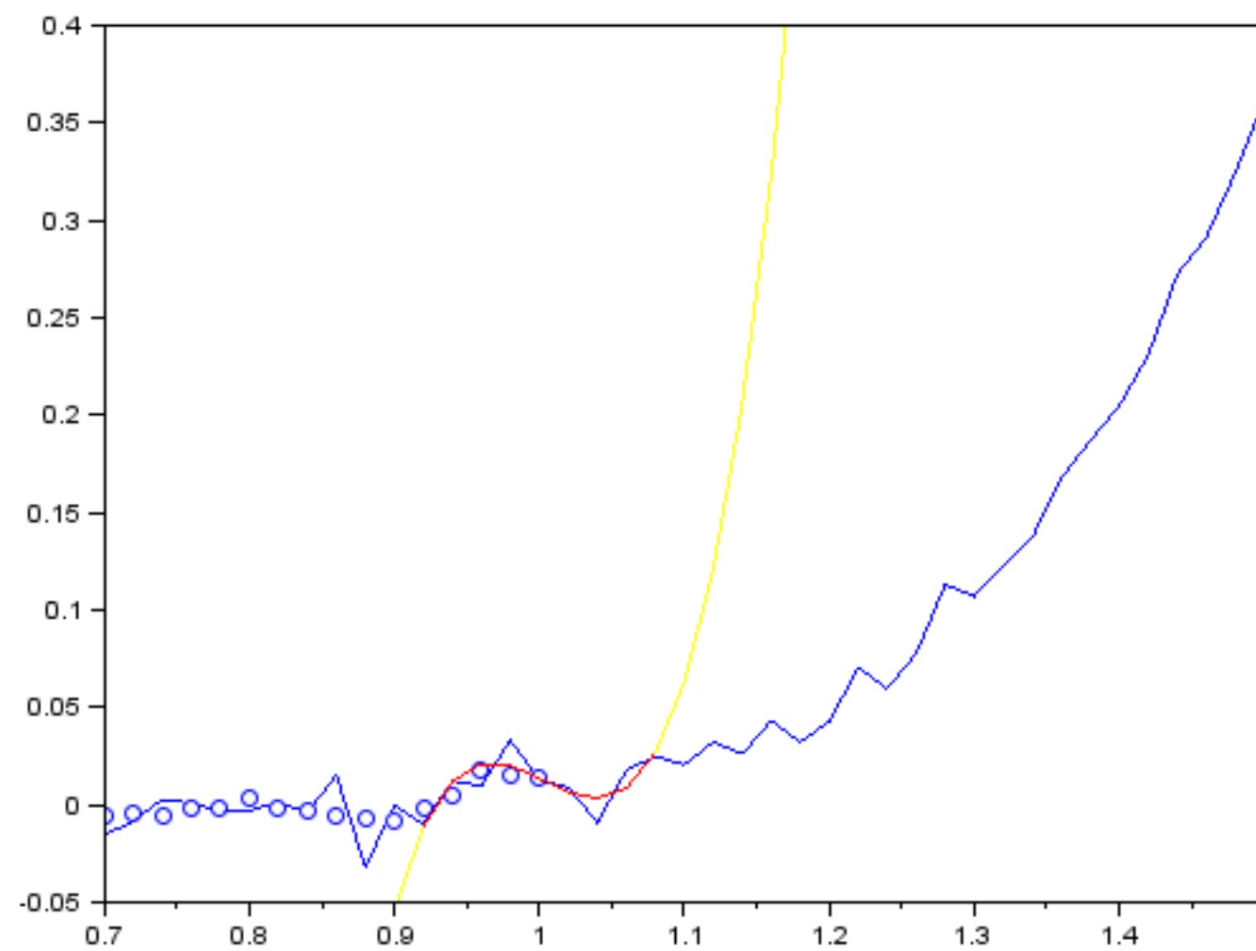


Filtered
21 Sample Window
– 3 Polynomial

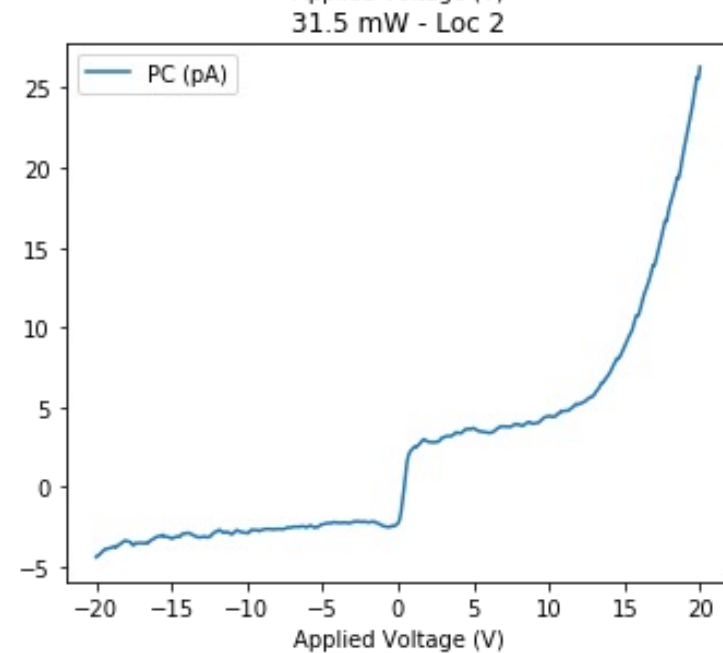
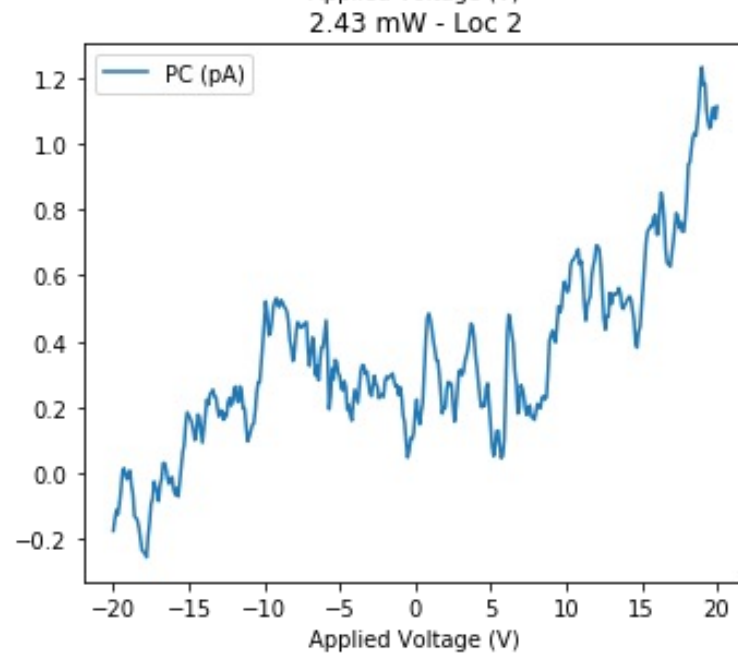
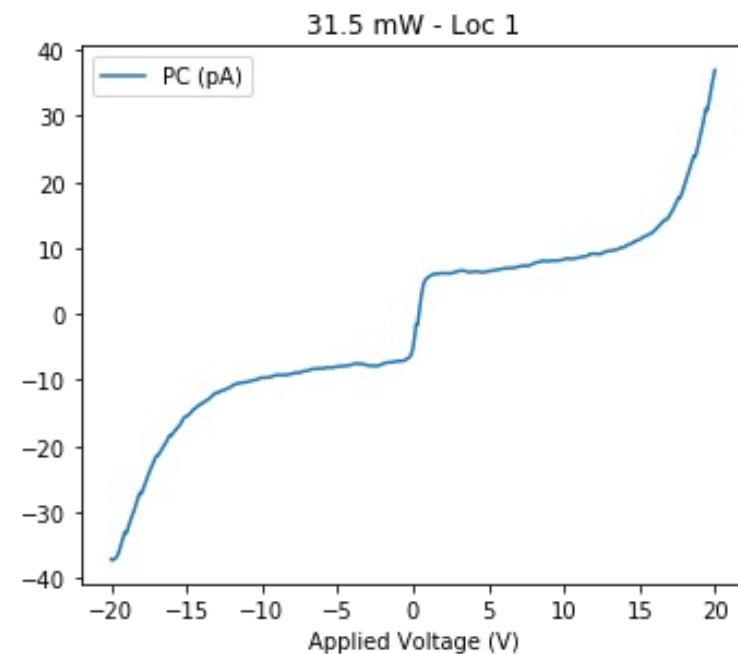
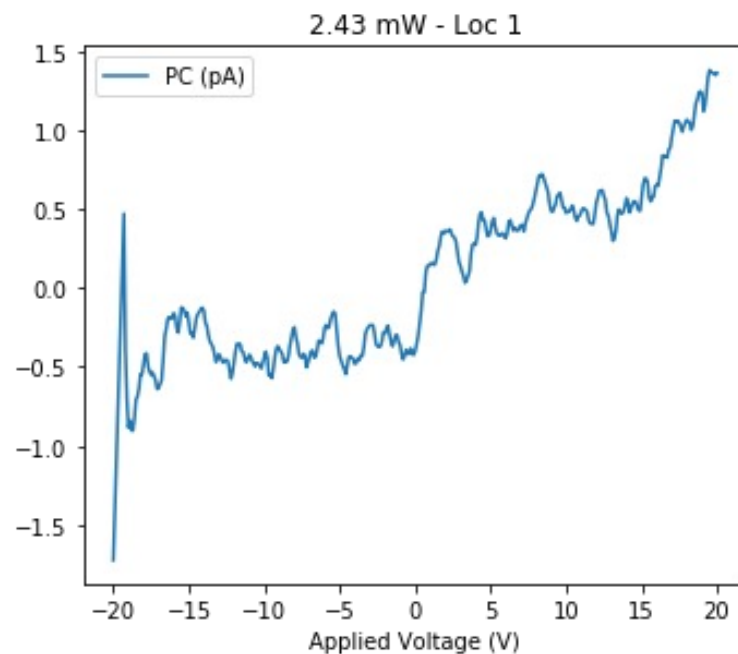


Filtered
31 Sample Window
– 3 Polynomial

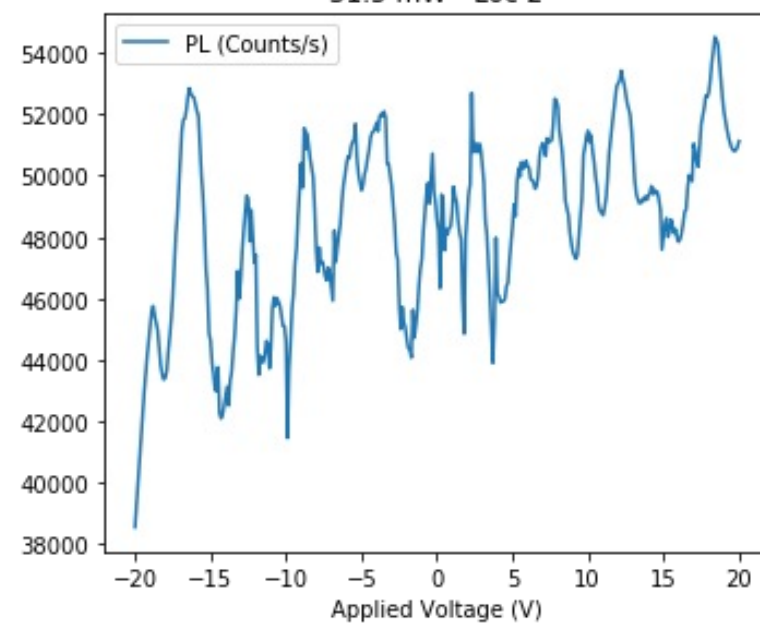
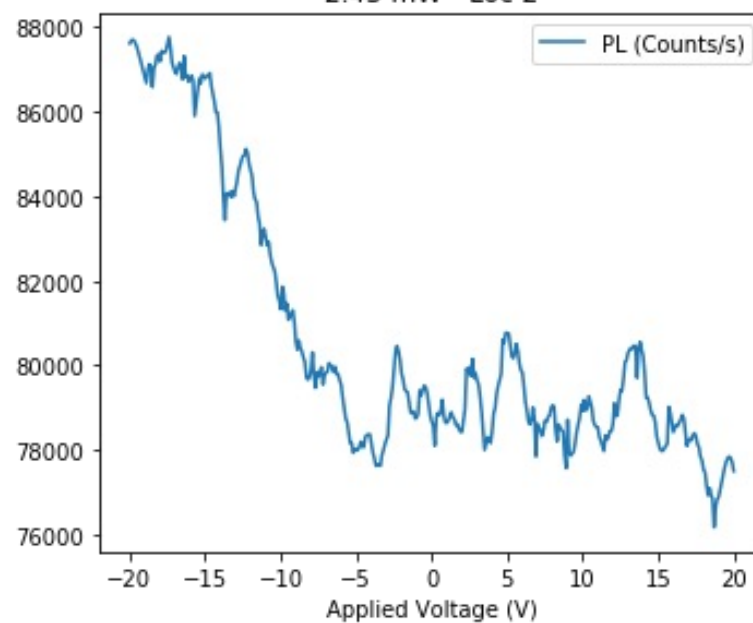
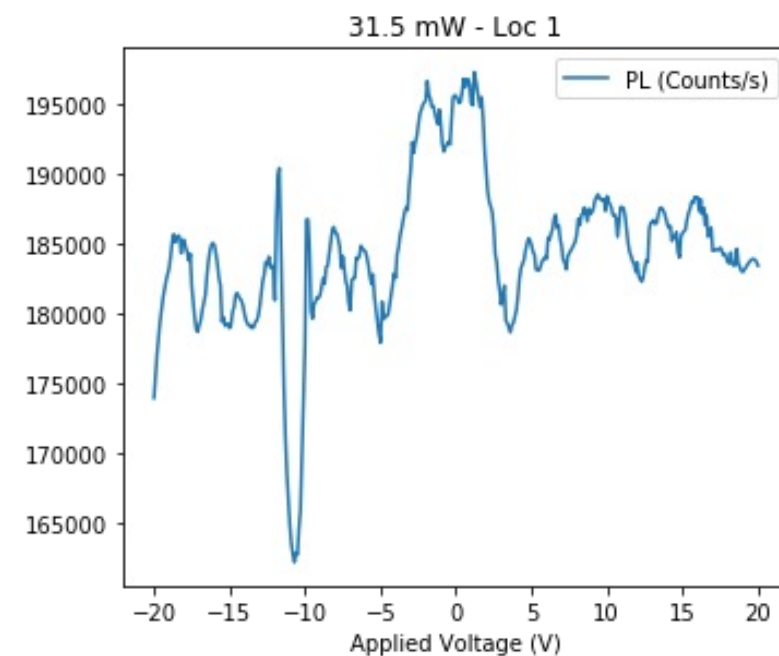
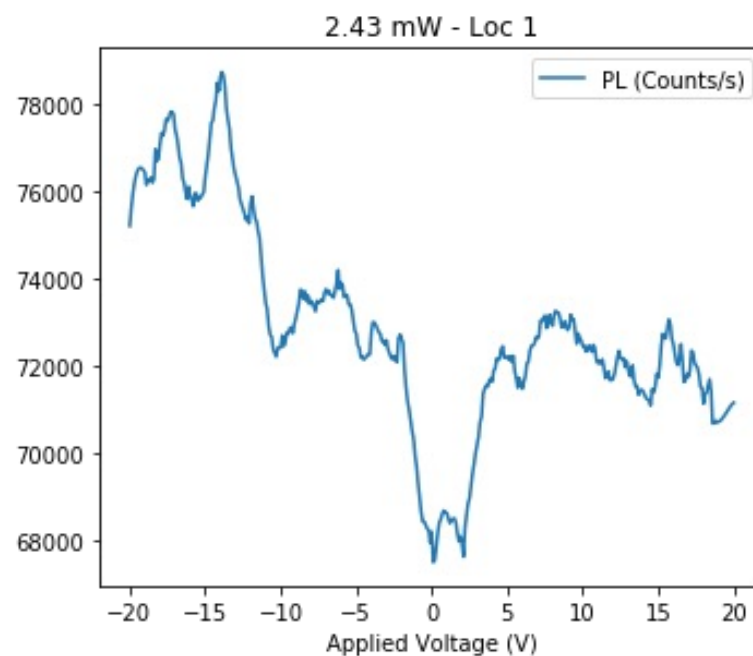
Savitzky-Golay Filter



#213 NV-Center - PC - Voltage Sweep - no mWave - @535nm



#213 NV-Center - PL - Smoothed Voltage Sweep - no mWave - @535nm



#213 NV-Center - PL - Smoothed Voltage Sweep - no mWave - @535nm

