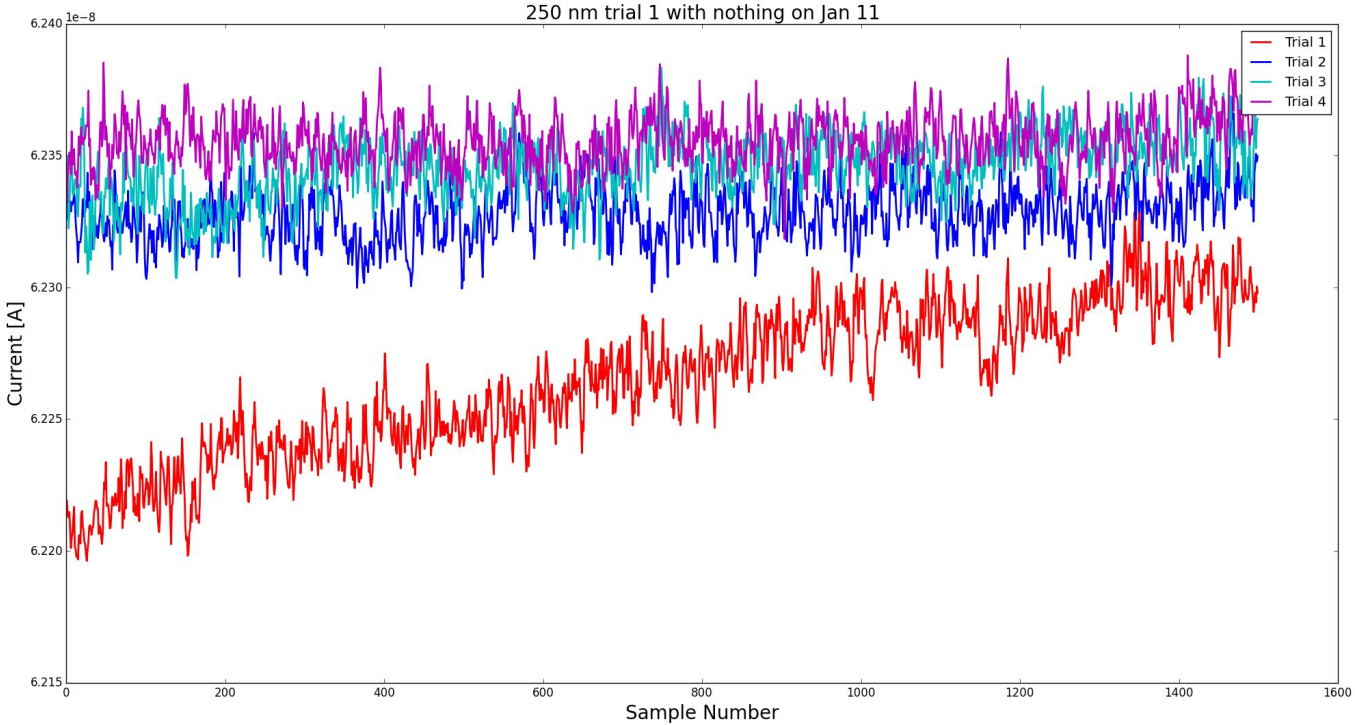
Weekly Update

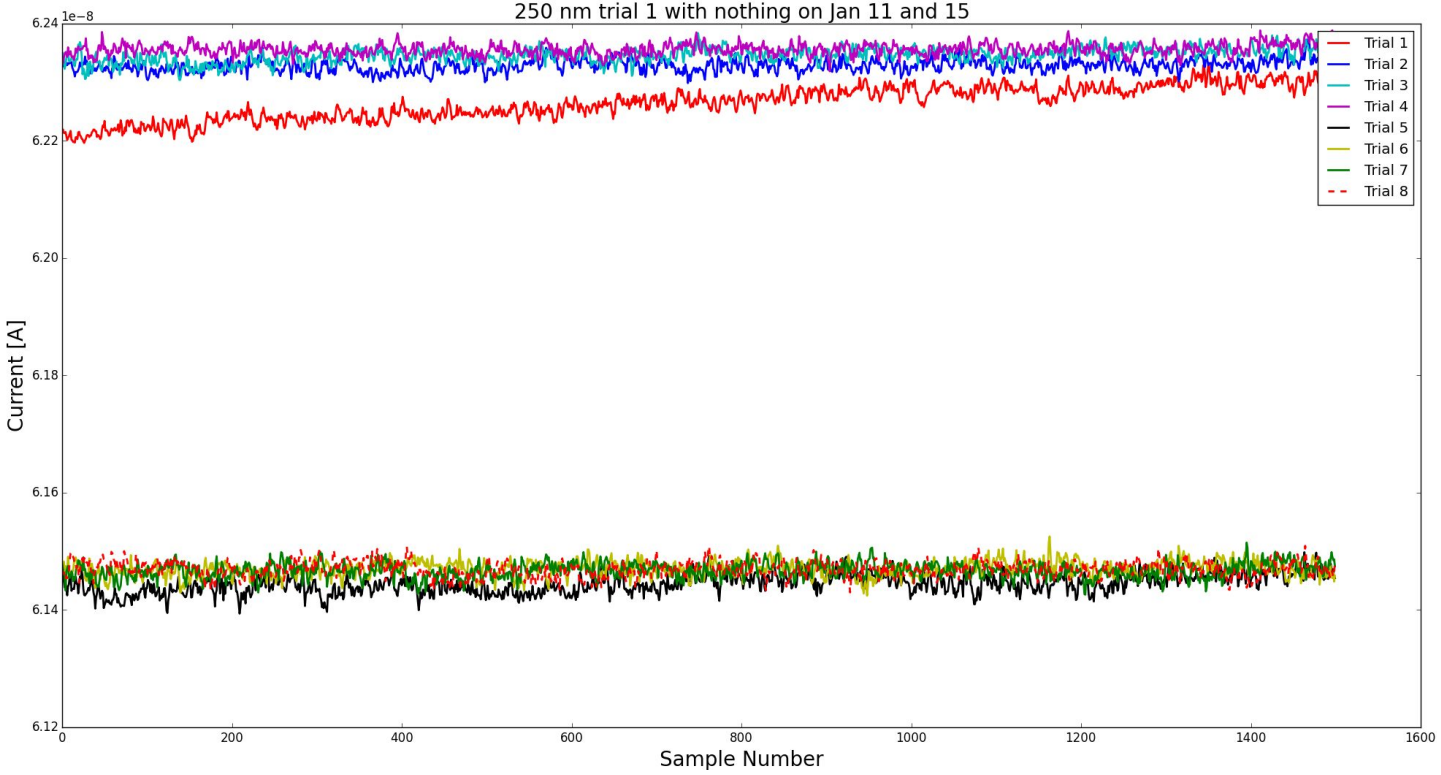
Jan 17/ 18

Continuing with consistency

- Did trials with no cuvette, with cuvette, as well as different heights

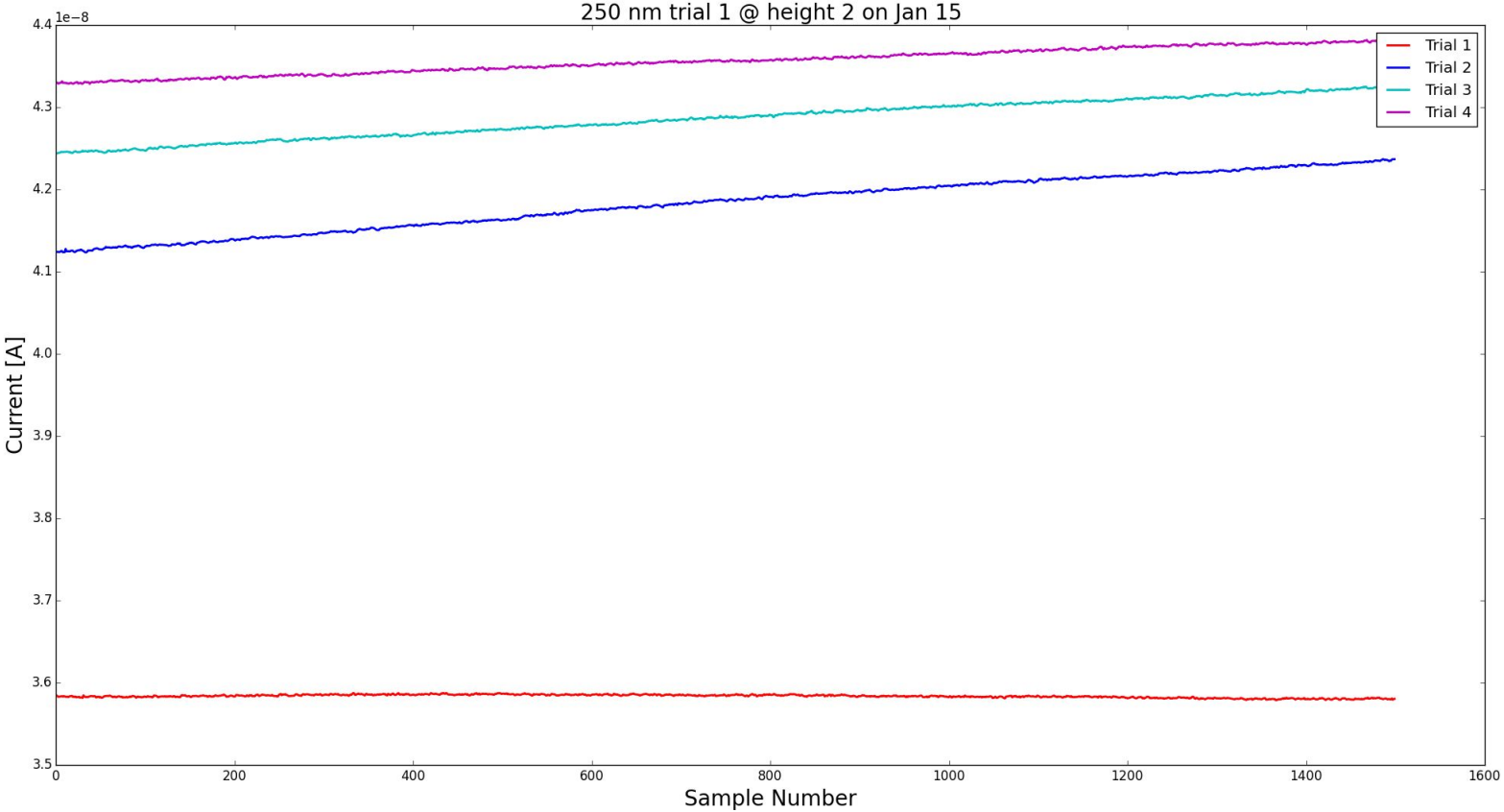


Jan 11 and 15 both with nothing

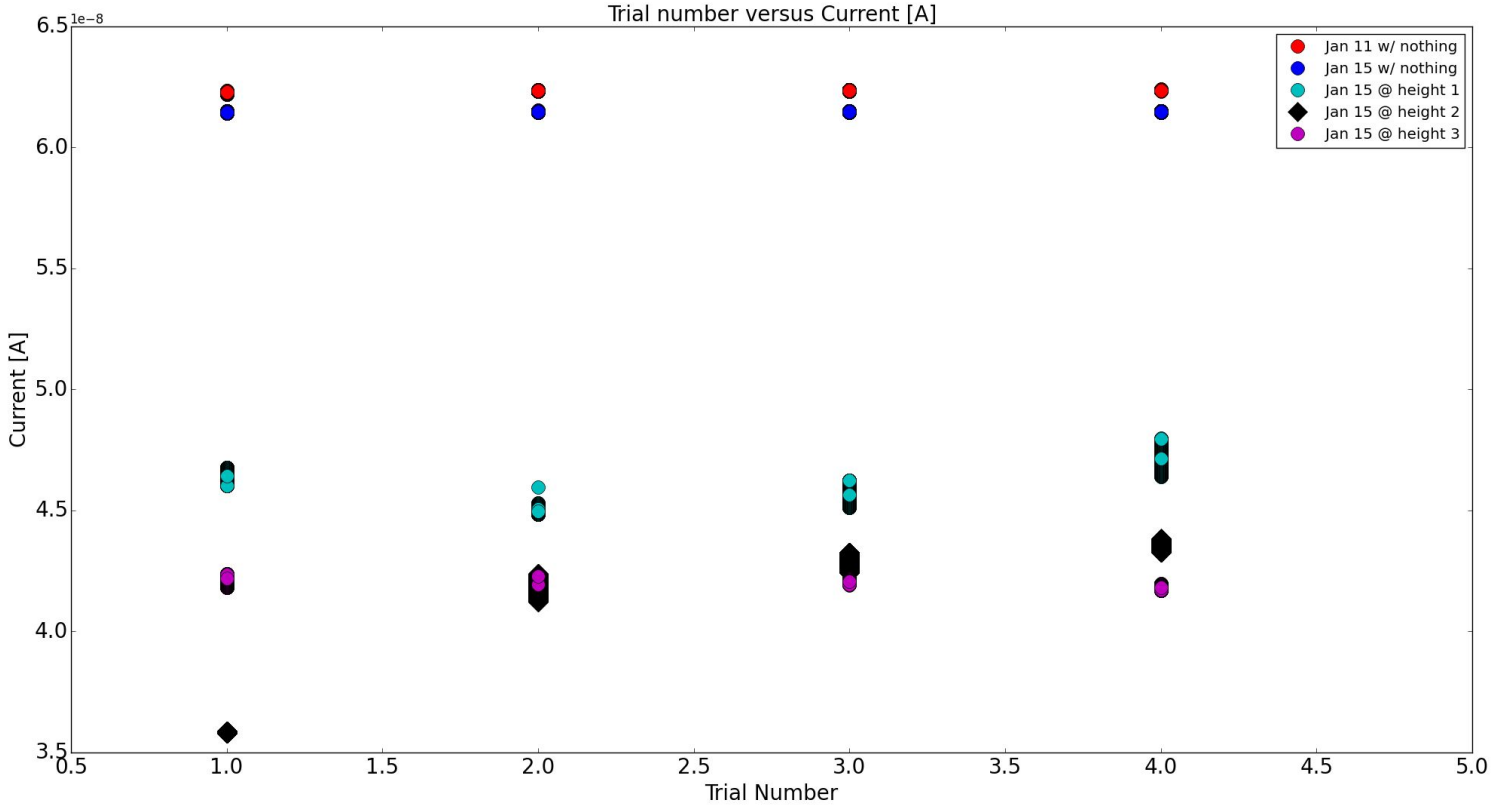


Heights

- I now marked the cuvette’s side with 4 lines (only 3 of which can actually be used because cuvette isn’t long enough for the fourth line) to check consistency of height
- Even within the same height there are inconsistencies
- Each trial, like before, is taken within 10 seconds of each other (so I can change the file name before redoing the trial to save the .txt)


250 nm trial 1 @ height 2 on Jan 15
1e−8
4.4
4.3
4.2
4.1
4.0
3.9
3.8
3.7
3.6
3.5
Current [A]
0
200
400
600
800
1000
1200
1400
1600
Sample Number
Trial 1
Trial 2
Trial 3
Trial 4

Everything together



CoV

- I only calculated the CoV for each trial (NOT as a whole yet) which I haven’t done yet
- 0.01593092881 71% Jan 11 w/ nothing
- 0.0212175138866% Jan 15 w/ nothing
- 0.992596816761% Jan 15 @ height 1
- 0.377476040587% Jan 15 @ height 2
- 0.174437494205% Jan 15 @ height 3
- I might need to double check the numbers but it makes sense as a single trial
- I don’t think it’ll be the same for whole set from looking at the graph

Conclusion for this week

- Seems like the variation after 3 minutes is large
- I usually give it 10-15 min warm up time before taking measurements because the lamp needs to warm up (something I showed back in October)
- With nothing, it seems stable but should be time independent (doesn't explain why Jan 11 nothing vs Jan 15 nothing has such big spread)
- Where I measure the height of the cuvette makes a different
- Was going to test how each cuvette differs as well but for some reason ⅗ of the cuvettes doesn't fit the slot.. (the base is wider so doesn't fit right)