

Artificial Eye Measurement Performed on 21-Feb-2020

February 21, 2020

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Artificial eye measurements in three trials. The duration of each trial is 10 seconds.

1 Right DPI - Static

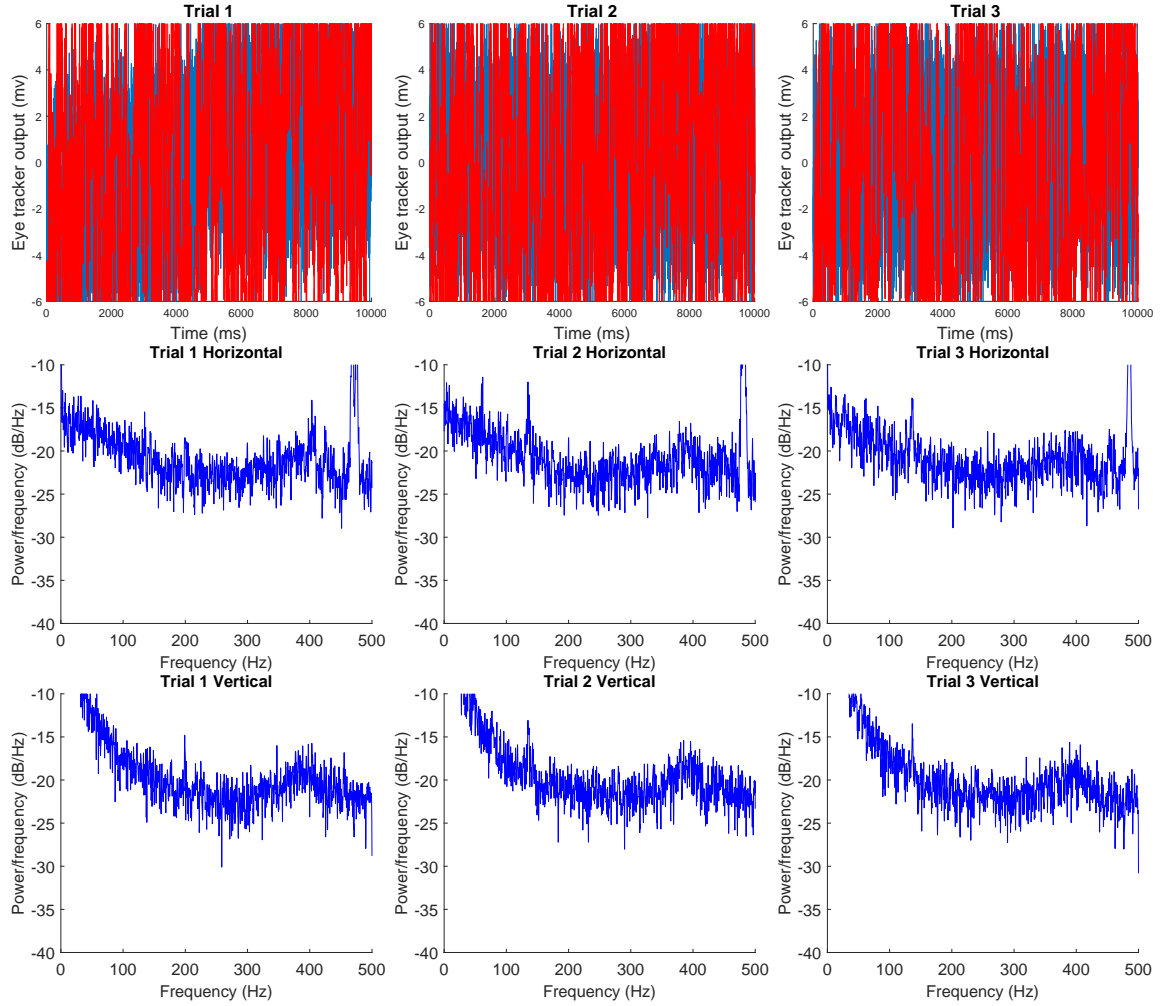


Figure 1: Top row: x and y traces. Middle row: power spectra of horizontal traces. Bottom row: power spectra of vertical traces

Trial #	standard deviation				root mean square			
	millivolts		arcmin		millivolts		arcmin	
	X	Y	X	Y	X	Y	X	Y
1	3.097	6.691	0.541	1.168	4.400	8.813	0.768	1.538
2	2.699	6.231	0.471	1.087	2.702	6.384	0.471	1.114
3	2.679	7.073	0.468	1.234	2.840	10.150	0.496	1.771
4	2.740	8.259	0.478	1.441	4.345	10.788	0.758	1.883
5	2.565	7.131	0.448	1.245	2.682	8.180	0.468	1.428
6	2.658	7.443	0.464	1.299	2.947	7.856	0.514	1.371

Table 1: Standard deviations and root mean square of traces in both voltage and arcmin

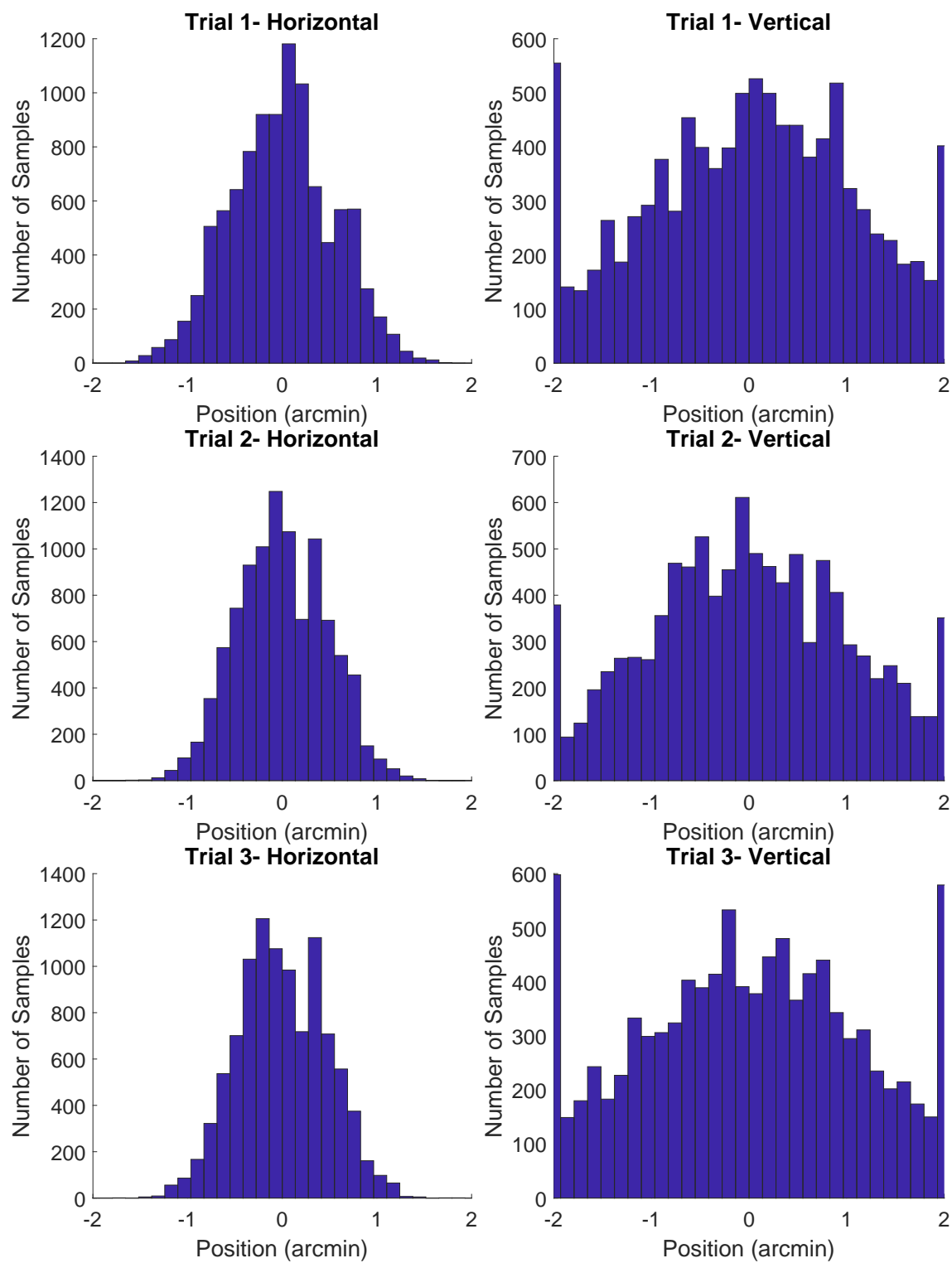


Figure 2: Histograms of horizontal and vertical positions (arcmin).

2 Left DPI - Static

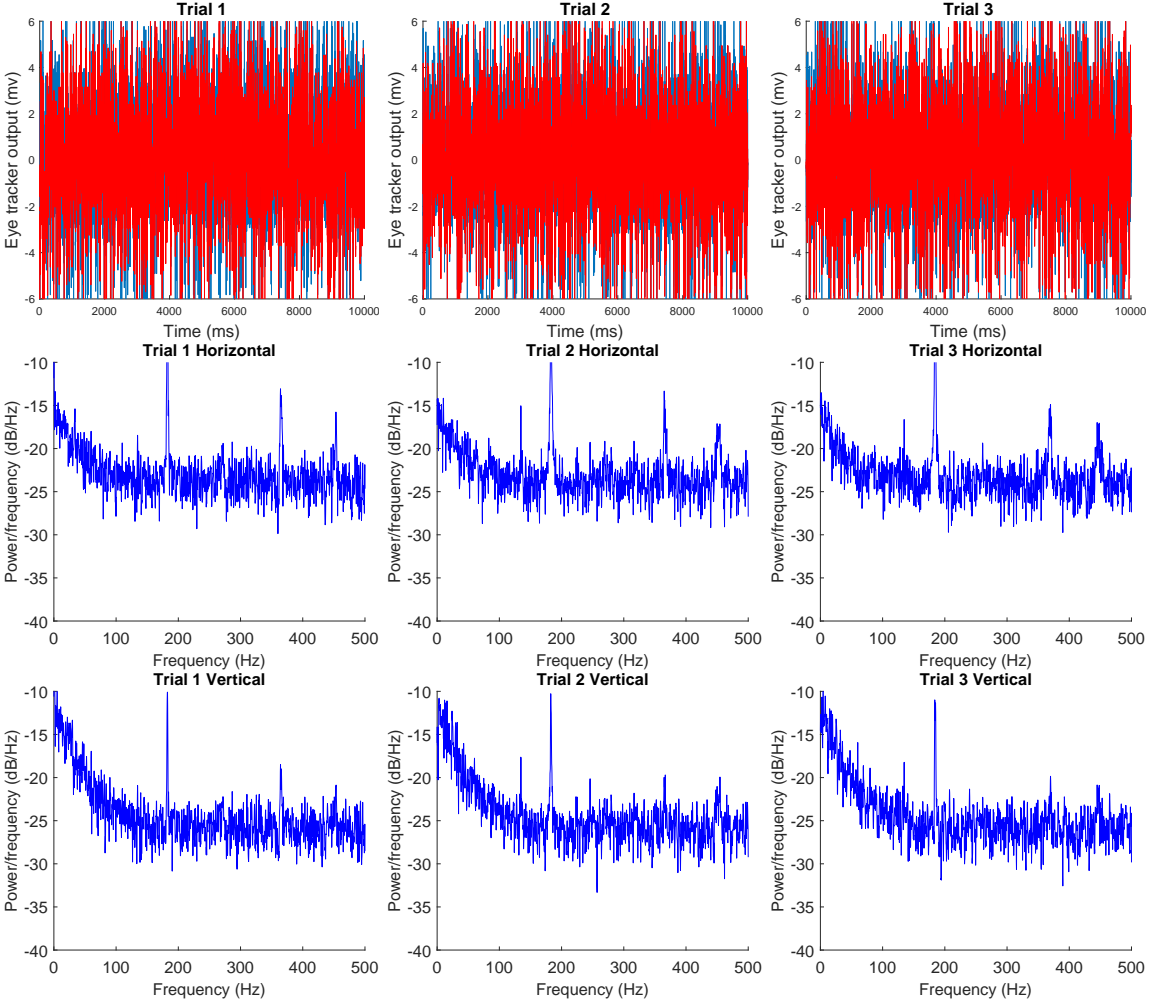


Figure 3: Top row: x and y traces. Middle row: power spectra of horizontal traces. Bottom row: power spectra of vertical traces

Trial #	standard deviation				root mean square			
	millivolts		arcmin		millivolts		arcmin	
	X	Y	X	Y	X	Y	X	Y
1	2.016	1.792	0.244	0.217	2.033	1.979	0.246	0.240
2	1.994	1.740	0.242	0.211	1.994	1.745	0.242	0.212
3	1.977	1.744	0.240	0.211	2.037	1.997	0.247	0.242

Table 2: Standard deviations and root mean square of traces in both voltage and arcmin

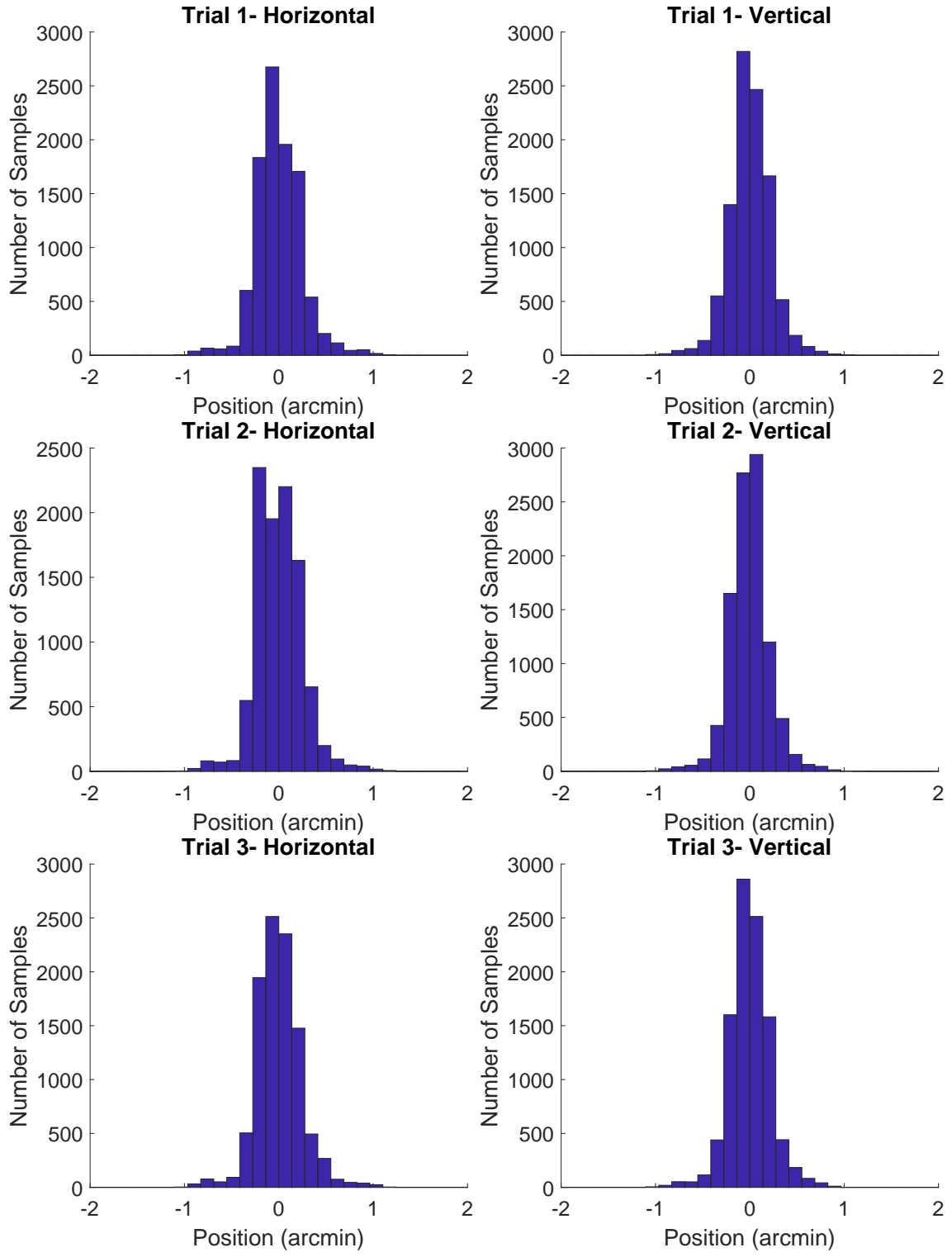


Figure 4: Histograms of horizontal and vertical positions (arcmin).

3 Right DPI - Resolution

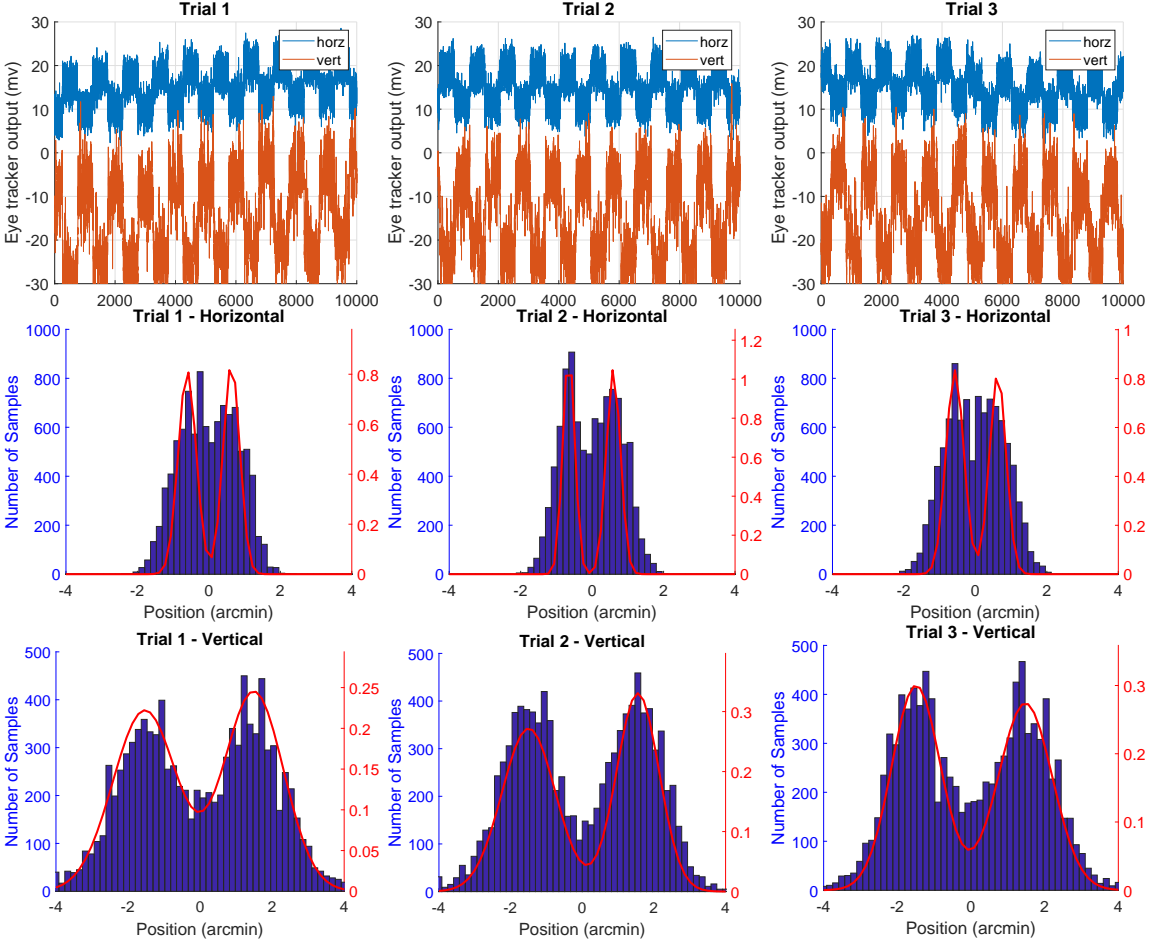


Figure 5: Top row: x and y traces vertically offset for visibility. Middle and Bottom rows: Histograms of horizontal and vertical data with superimposed mixed gaussian fit.

Trial #	step size				d'	
	millivolts		arcmin		X	Y
	X	Y	X	Y		
1	7.099	17.356	1.239	3.029	5.149	3.537
2	7.145	17.465	1.247	3.048	6.834	4.523
3	6.883	17.002	1.201	2.967	4.991	4.257

Table 3: Estimated amplitude of square wave in voltage and arcmin. Discriminability of step size (d').

4 Left DPI - Resolution

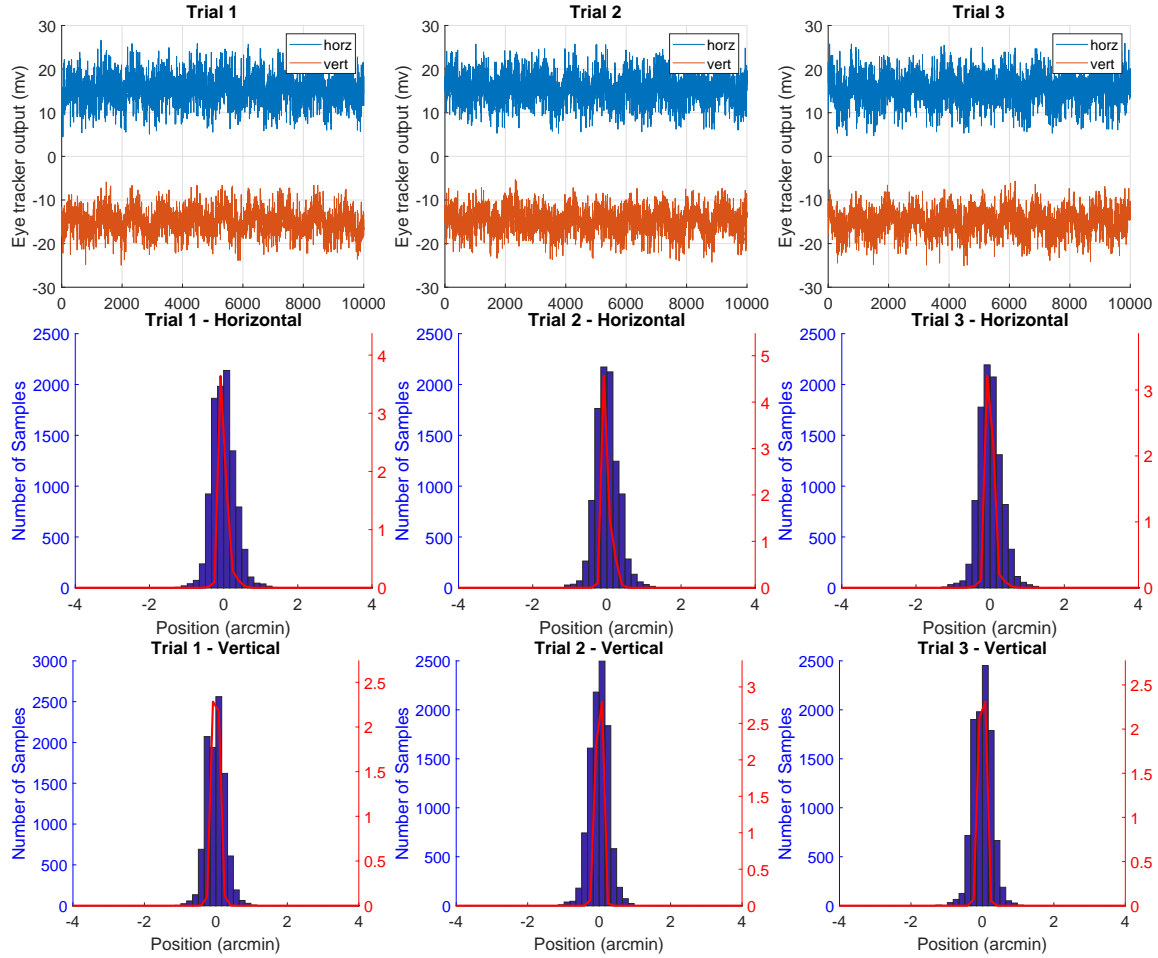


Figure 6: Top row: x and y traces vertically offset for visibility. Middle and Bottom rows: Histograms of horizontal and vertical data with superimposed mixed gaussian fit.

Trial #	step size				d'	
	millivolts		arcmin		X	Y
	X	Y	X	Y		
1	1.109	0.042	0.134	0.005	0.883	0.054
2	1.101	0.281	0.133	0.034	1.300	0.500
3	0.728	0.081	0.088	0.010	0.519	0.136

Table 4: Estimated amplitude of square wave in voltage and arcmin. Discriminability of step size (d').

5 Right DPI - Dynamics

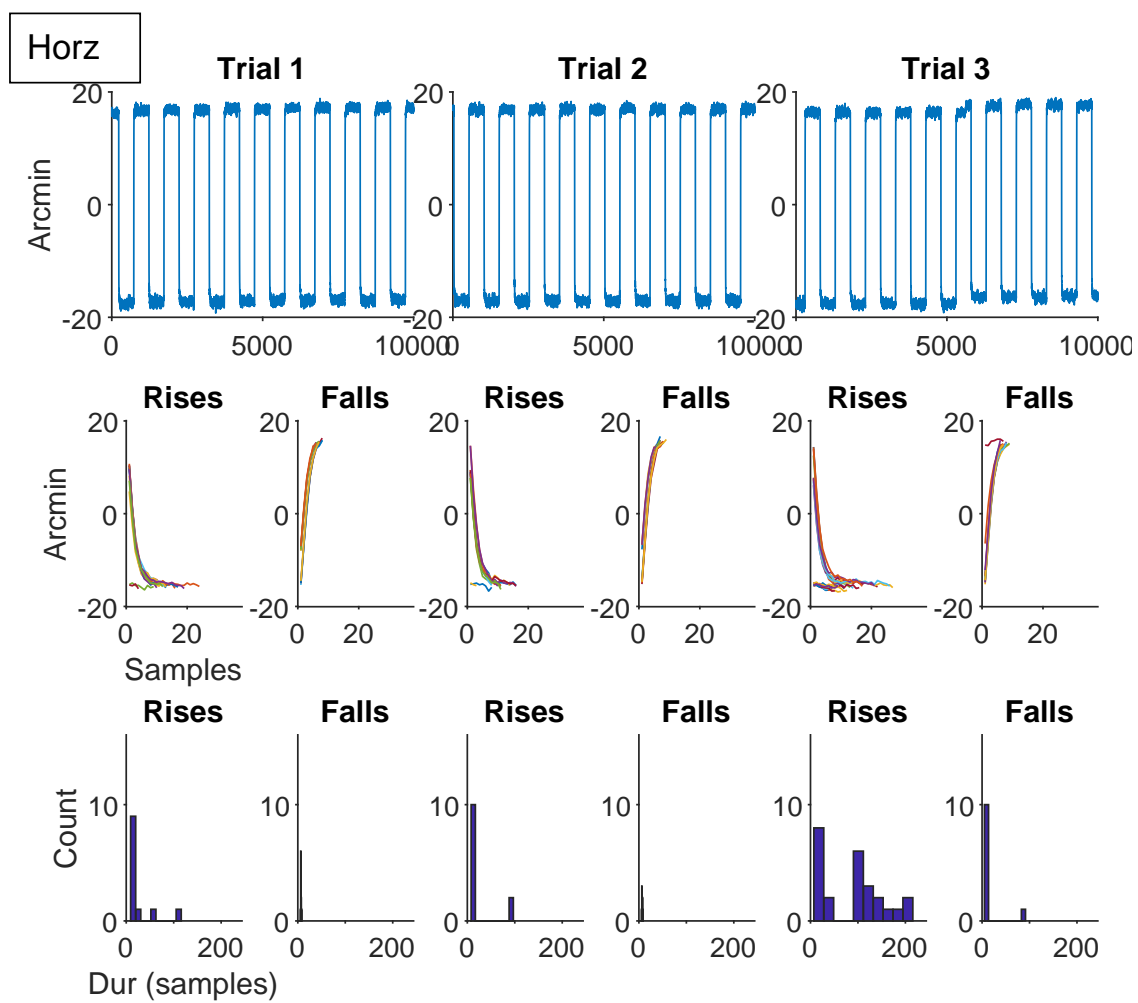


Figure 7: Top row: Horz traces. Middle row: Example rises and falls from each trial. Bottom row: Histogram of rise and fall times in each trial.

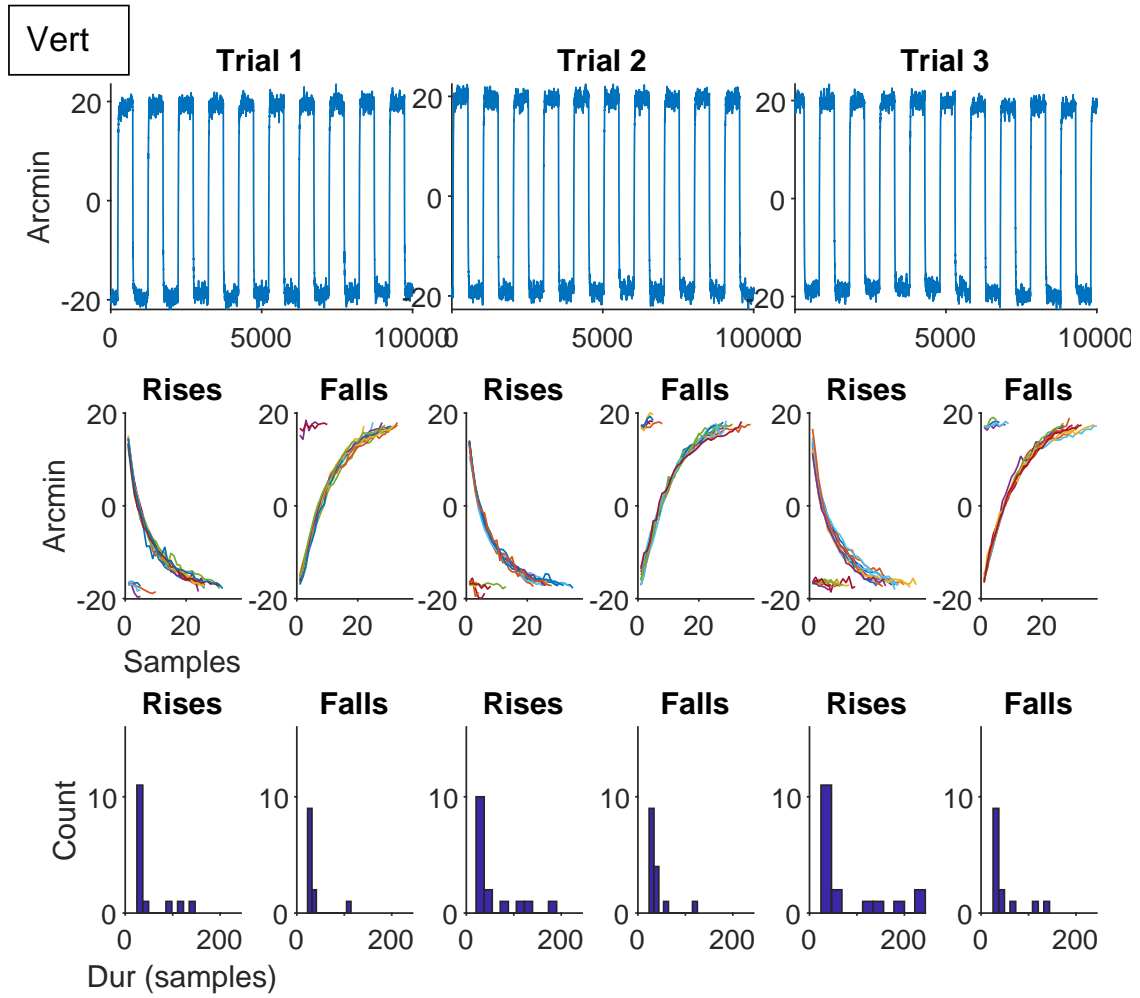


Figure 8: Top row: Vert traces. Middle row: Example rises and falls from each trial. Bottom row: Histogram of rise and fall times in each trial.

Trial #	Horizontal					
	Rise		Fall			
	time (ms) Mean \pm STD	amplitude mv arcmin	time (ms) Mean \pm STD	amplitude mv arcmin		
1	26.597 \pm 30.394	-97.274 -16.976	6.572 \pm 0.704	96.571 16.854		
2	26.275 \pm 32.768	-96.963 -16.922	6.820 \pm 0.810	96.396 16.823		
3	89.640 \pm 66.668	-96.720 -16.880	14.149 \pm 25.683	96.405 16.825		
Trial #	Vertical					
	Rise		Fall			
	time (ms) Mean \pm STD	amplitude mv arcmin	time (ms) Mean \pm STD	amplitude mv arcmin		
1	49.527 \pm 38.397	-105.802 -18.465	35.951 \pm 24.793	108.191 18.882		
2	55.394 \pm 48.159	-106.413 -18.571	39.700 \pm 25.773	108.795 18.987		
3	77.828 \pm 73.241	-105.758 -18.457	49.079 \pm 37.004	107.972 18.843		

Table 5: Rise and fall times (mean \pm STD) in horizontal and vertical traces across trials. Amp = amplitude of rise and fall in arcmin and millivolts. MAC: Please confirm?

6 Left DPI - Dynamics

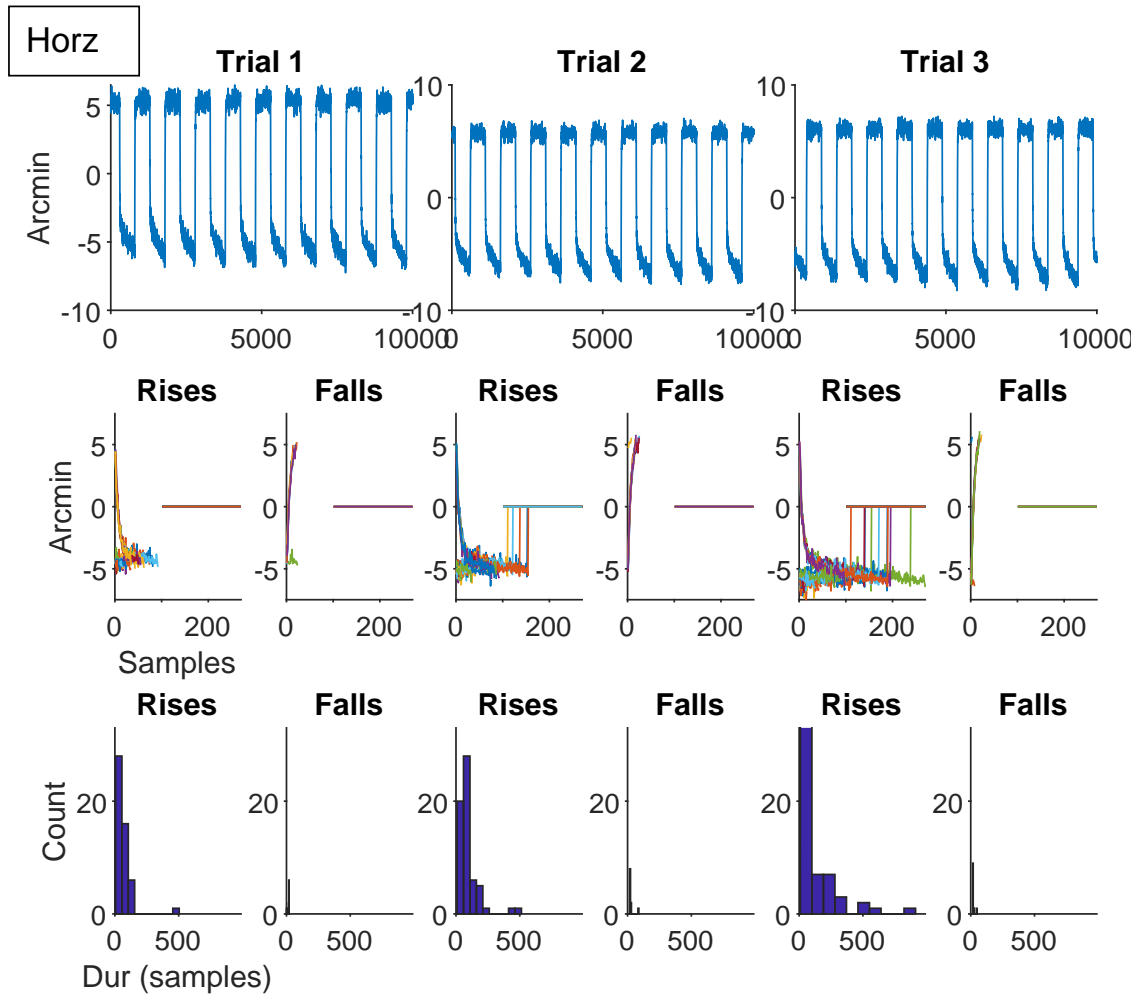


Figure 9: Top row: Horz traces. Middle row: Example rises and falls from each trial. Bottom row: Histogram of rise and fall times in each trial.

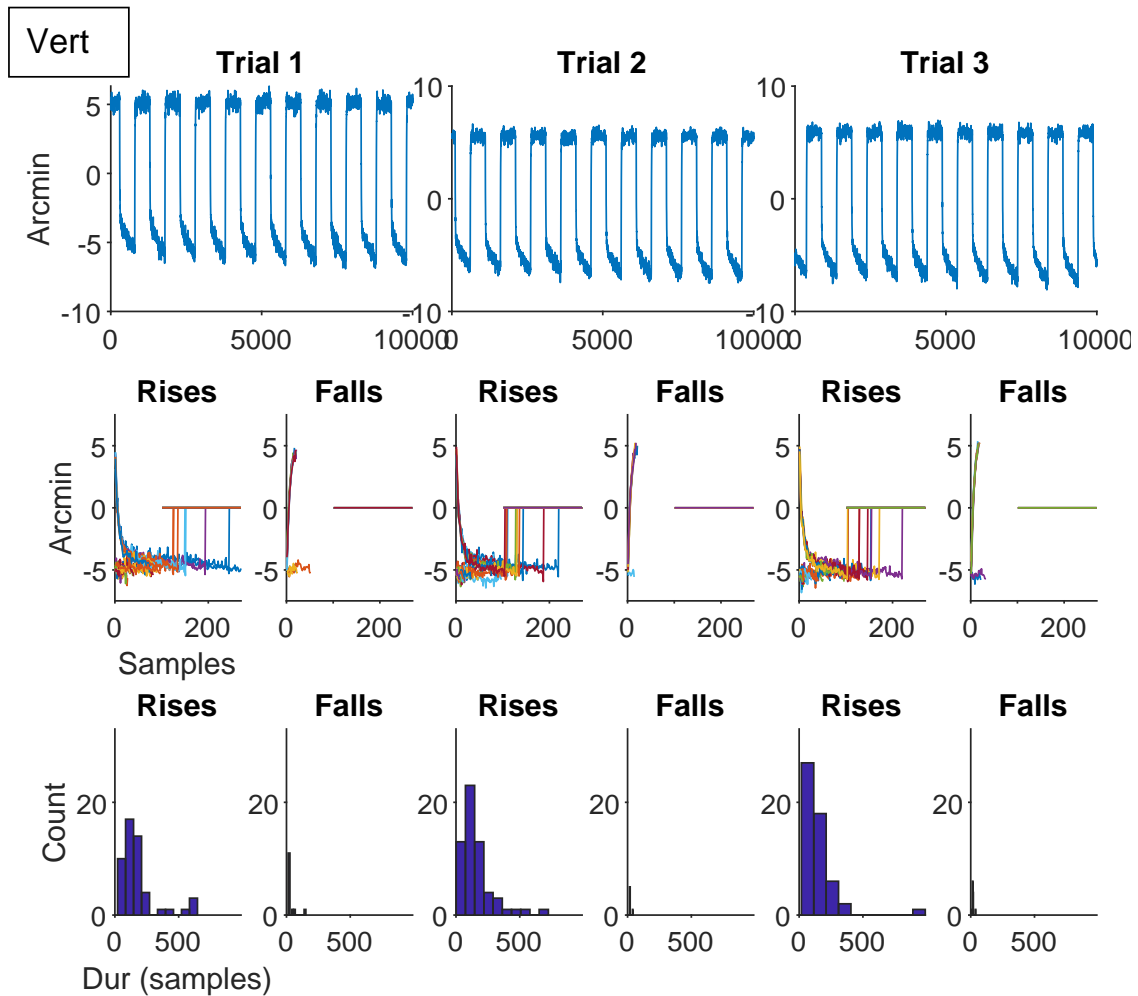


Figure 10: Top row: Vert traces. Middle row: Example rises and falls from each trial. Bottom row: Histogram of rise and fall times in each trial.

		Horizontal					
		Rise			Fall		
Trial #	time (ms) Mean \pm STD	amplitude mv	amplitude arcmin	time (ms) Mean \pm STD	amplitude mv	amplitude arcmin	
1	70.299 \pm 71.018	-42.841	-5.193	16.285 \pm 5.742	42.674	5.173	
2	97.104 \pm 86.910	-46.235	-5.604	25.572 \pm 21.069	46.256	5.607	
3	119.401 \pm 150.249	-49.017	-5.941	20.998 \pm 9.141	49.098	5.951	
		Vertical					
		Rise			Fall		
Trial #	time (ms) Mean \pm STD	amplitude mv	amplitude arcmin	time (ms) Mean \pm STD	amplitude mv	amplitude arcmin	
1	179.129 \pm 146.446	-41.497	-5.030	33.300 \pm 36.801	41.394	5.017	
2	157.109 \pm 132.569	-44.841	-5.435	20.056 \pm 7.172	44.873	5.439	
3	143.424 \pm 141.056	-47.468	-5.754	17.906 \pm 8.170	47.692	5.781	

Table 6: Rise and fall times (mean \pm STD) in horizontal and vertical traces across trials. Amp = amplitude of rise and fall in arcmin and millivolts. MAC: Please confirm?