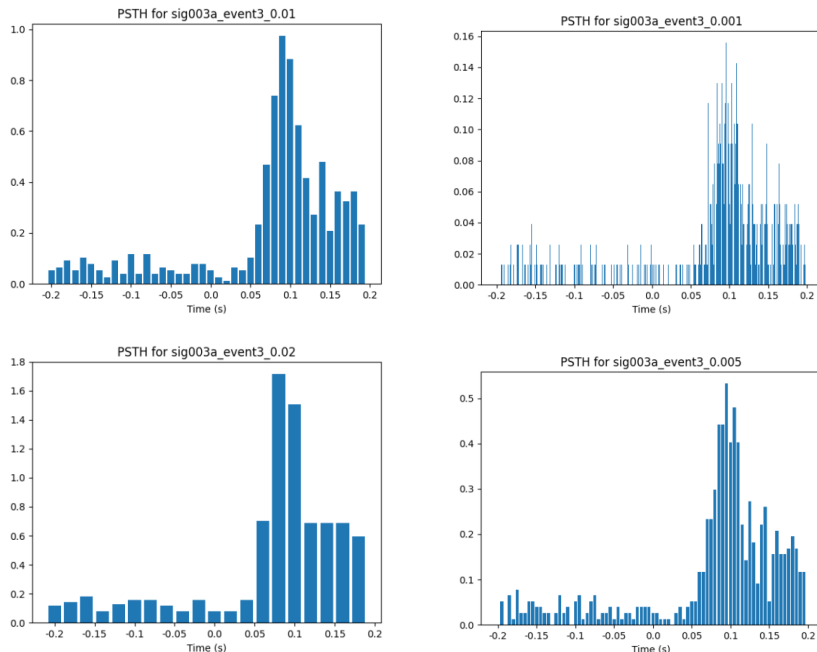


BIM 280: HOMEWORK 1

Conceptual Questions

- Which of the bin sizes do you think best represents the neural activity? Explain.

I think the bin sizes for 0.005 or 0.01 s best represent the neural activity. Because these bins are not too large or small like the rest. For the larger bins, it is not possible to capture the precise temporal patterns of neural activity. For the smaller bins, the temporal patterns of neural activity are difficult to discern due to the high variability in the PSTH. For instance, the temporal activity at time 0.15 s below is clearly seen in the top-left (bin_size = 0.01 s) and bottom-right (bin_size = 0.005 s) figures, but it is not that clear in others.



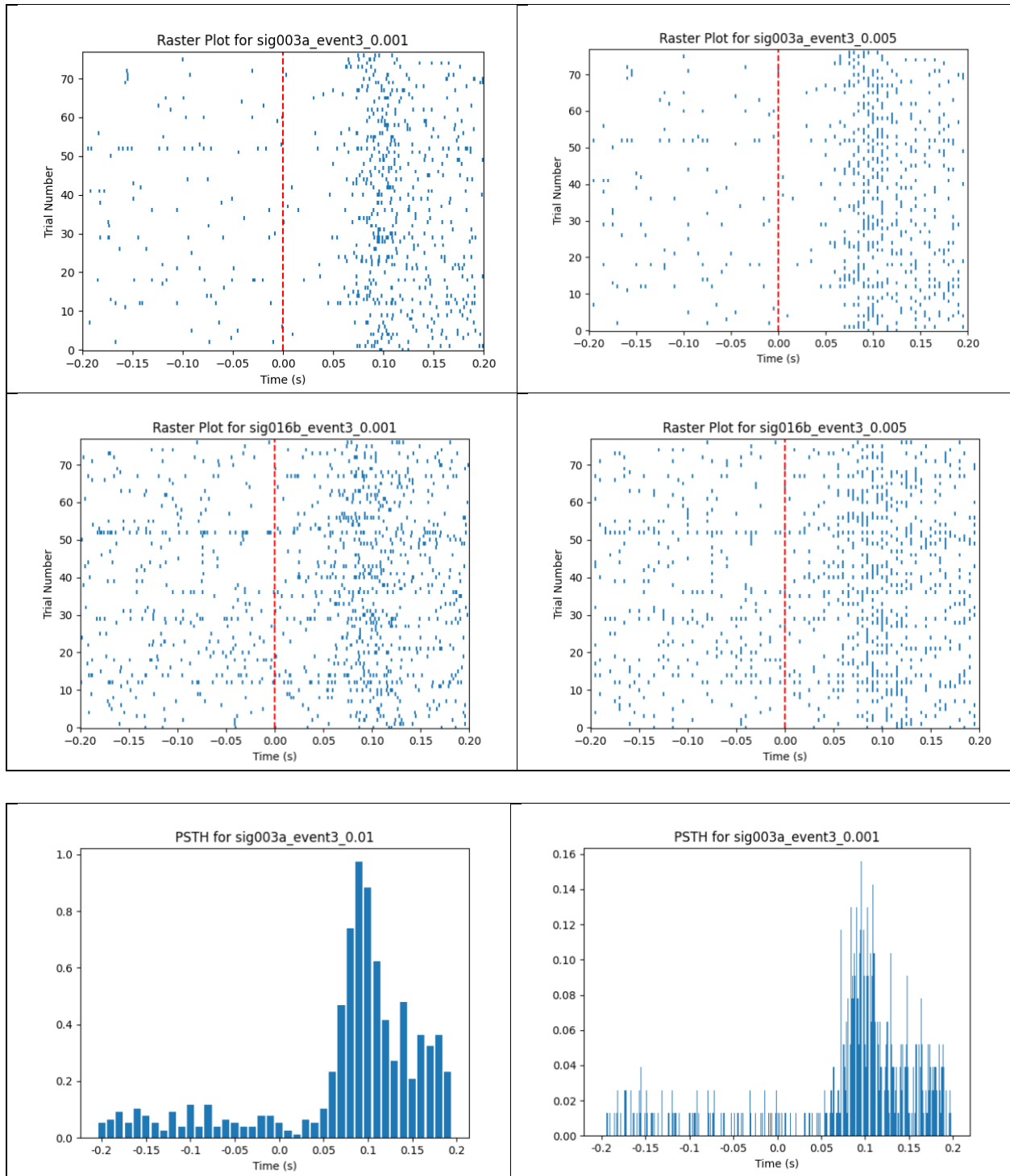
- Do you notice a trend across the first bin latencies? Why do you think that there is or is not a trend?

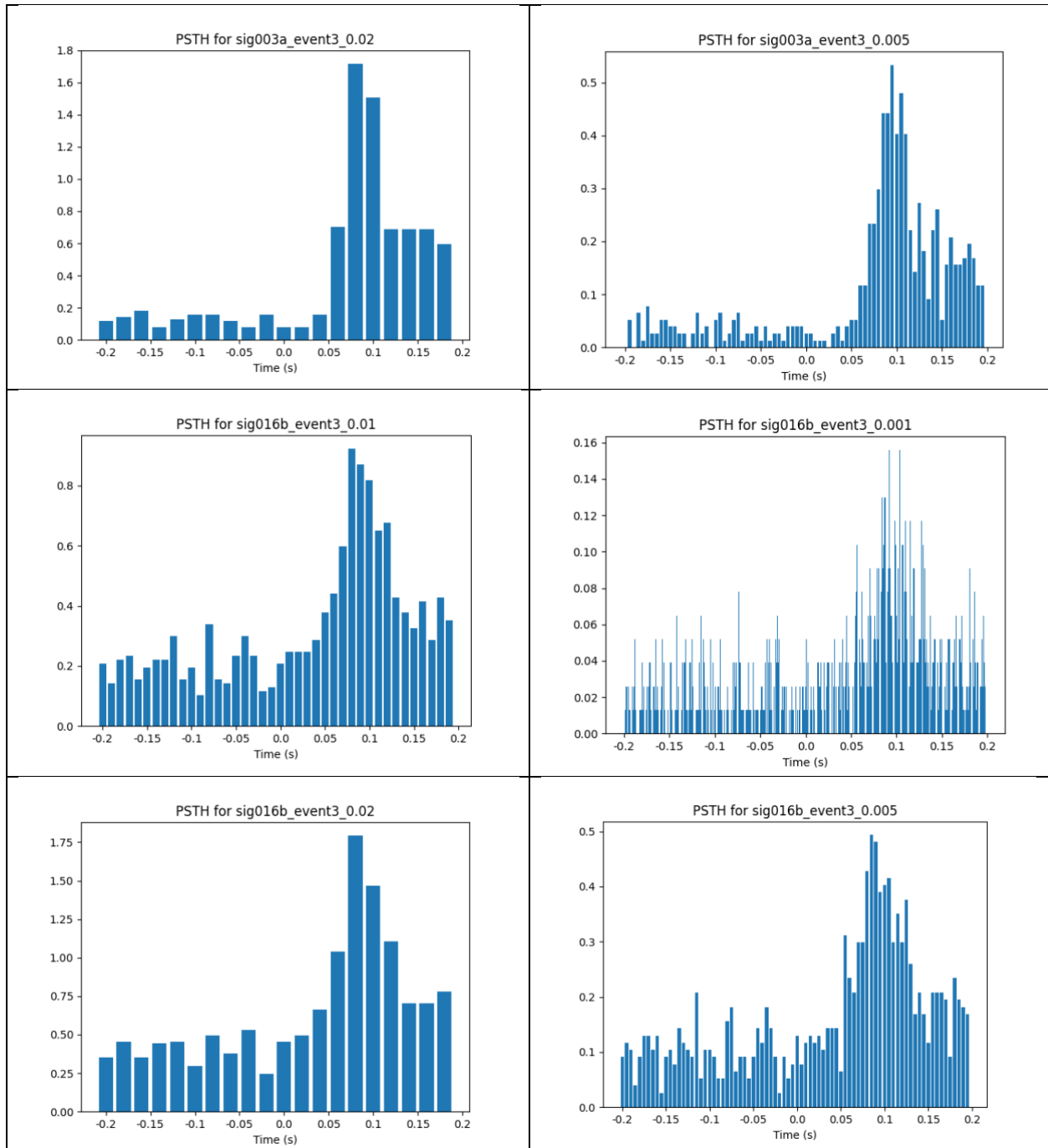
Yes, it seems like there is a trend across the first bin latencies (fbl). Because fbl values are in a similar range (except event 6 for neuron sig016b). They start to fire around the time. It actually might be a fingerprint for each neuron, since here neuron sig003a has the same fbl for events 3 and 6.

Bin size = 0.005	Sig003a	Sig016b
Event 3	0.0625 (fbl)	0.0575 (fbl)
Event 6	0.0625 (fbl)	0.0025 (fbl)

Graphs

For event 3:





For event 6:

