Computational Neuroscience
Spike Analysis

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1 Question One

For a Poisson generated spike train of 1000 seconds length with firing rate 35Hz, the calculated spike metrics were - for windows of width 10ms, 50ms, and 100ms respectively.

1.1 Refractory Period 0ms

Fano Factors : 0.65629 (10ms Window), 1.00133 (50ms Window), 1.76023 (100ms Window), 5dp.
Coefficient of Variation : 1.36530, 5dp.

1.2 Refractory Period 5ms

Fano Factor : 0.426047 (10ms Window), 1.00143 (50ms Window), 1.76081 (100ms Window), 5dp.
Coefficient of Variation : 265.09924, 5dp.

2 Question Two

For the spike train located in rho.dat, the calculated spike metrics were - for windows of width 10ms, 50ms, and 100ms respectively.
Fano Factors : 0.553338 (10ms Window), 2.03108 (50ms Window), 3.73864 (100ms Window), 5dp.
Coefficient of Variation : 2.00859, 5dp.

3 Question Three