

```
In [1]: import sys
sys.path.append('../')
```

```
In [2]: from neuro_models import PoissonProcess
```

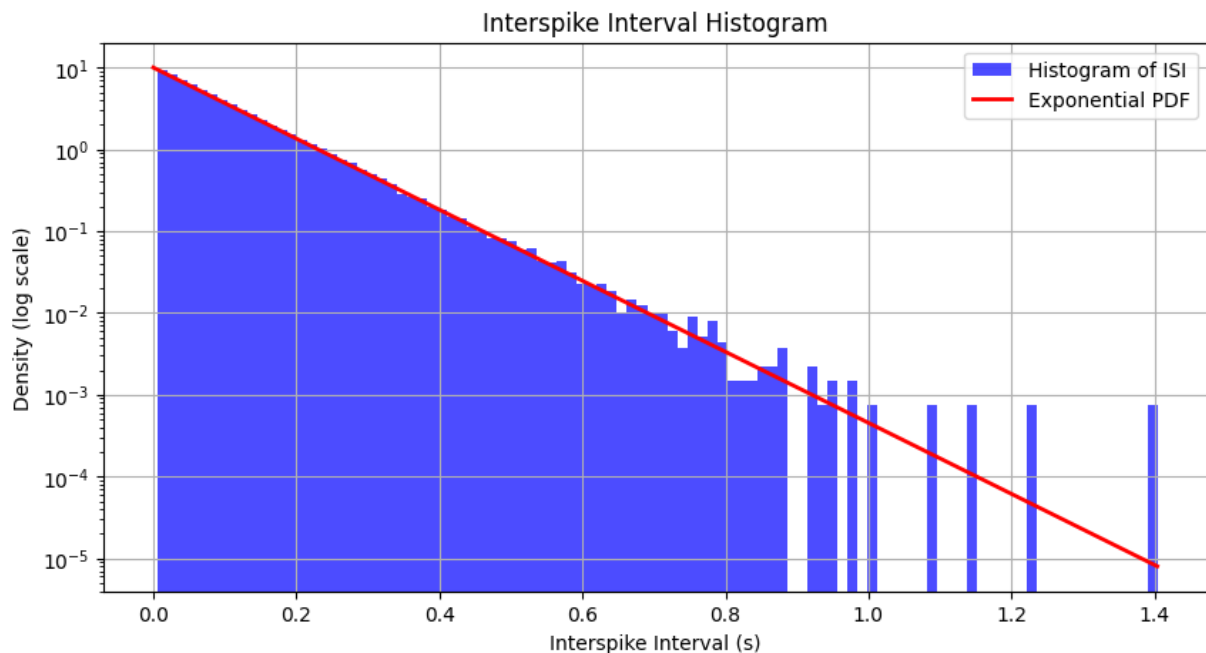
```
In [9]: param = {
    "firing rate": 10,
    "T": 10,
    "realizations": 1000,
    "refractoriness": 0.005
}
pp = PoissonProcess(param)
```

```
In [10]: pp.simulate_refractory_isi()
```

```
In [12]: pp.simulateinterspikeintervals()
print(f"Fano Factor for 1000 realizations of Poisson process: {pp.compute_fano_factor()}")

Fano Factor for 1000 realizations of Poisson process: 0.9423892248046442
```

```
In [11]: pp.plotinterspikeintervals()
```



With refractoriness, the histogram plot of the interspike intervals shifts rightward a small amount following the same shape as the exponential distribution. This is due to the memoryless property of the exponential distribution which each interspike interval is sampled from. The fano factor is the same as without refractoriness.