

Lecture on July 25th, 2019
Distributions Associated with Poisson Process, Spatial Poisson
Process

1 Distributions Associated with Poisson Process (See Chap 5.3)

- Sojourn time S_n 's are independent and follows $\text{Exp}(\lambda)$.
- $X(u)|X(t) = n \sim \text{Binomial}(n, \frac{u}{t})$, where $X(t)$ is a Poisson Process with rate λ .

2 Uniformly Distribution and Poisson Process (See Chap 5.4)

- Conditioned on a fixed number of events, the locations of those events in a Poisson process are uniformly distributed.
- Example of Customer Arrivals to estimate expected total amount of money discounted back to time 0.

3 Spatial Poisson Process (See Chap 5.5)

- 2 or 3 dimensional example.
- Generalized Definitions of Poisson Point Process.