Lecture on July 23th, 2019
Poisson Process and Law of Rare Events

1 Poisson Process (See 5.1)

- Review for Poisson distribution.

- Definition of homogenous and non-homogenous Poisson process.

- Method to transform a non-homogenous Poisson process to a unit homogenous Poisson process.

2 Law of Rare Events (See 5.2)

- Law of rare events is saying that the number of rare events happening is following a Poison distribution.

- Example: a sum of N i.i.d. Bernoulli(p) r.v. goes to Poisson(μ), when taking $N \to \infty, p \to 0$ in such a way that $Np = \mu$ fixed.

- Example of stochastic modeling, use Poisson distribution to model the number of accidents.

- Theorem on Poisson Approximation Error.