

Lecture on July 30th, 2018
Birth and Death Process

1 Pure Death Process (See Chap 6.2)

- Definition of pure death process in terms of continuous time Markov process.
- The differential equations $P_n(t) = \mathbb{P}(X(t) = n | X(0) = 0)$ satisfies.
- Sojourn time for pure death process.
- Example: Linear Death Process.

2 Birth and Death Process (See Chap 6.3)

- Definition of birth and death process in terms of continuous time Markov process.
- Definition of infinitesimal generator for birth and death process.
- Chapman-Kolmogorov Equation.
- Sojourn time for birth and death process.
- Backward Kolmogorov Equation and Forward Kolmogorov Equation.