

Lecture on July 18th, 2019  
Basic Limit Theorem of Markov Chain

**1 Basic Limit Theorem of Markov Chains (See 4.4)**

- State the basic limit theorem of Markov Chain.
- For reducible case, focus on each class.
- Definition of positive recurrent, null recurrent and stationary distribution.
- Positive or null recurrent is a class property.
- In a positive recurrent aperiodic class, limiting distribution can be solved from stationary distributions.
- Existence of stationary distribution doesn't imply existence of limiting distribution.