Review of Elementary Stochastic Processes Thoeries

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Preface

TBD

1 Markov Chains

A *stochastic process* can be defined quite generally as any collection of random variables $X(t)$, $t \in T$, defined on a common probability space, where T is a subset of $(-\infty, \infty)$ and is thought of as the time parameter set. If the random variables $X(t)$ all take on values from the fixed set $\mathscr{S}$, then $\mathscr{S}$ is called the *state space* of the process.

2 Stationary Distributions of a Markov Chain

3 Markov Pure Jump Processes

4 Second Order Processes