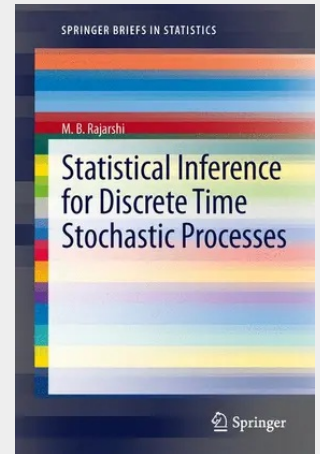


Statistical Inference for Discrete Time Stochastic Processes

This work is an overview of statistical inference in stationary, discrete time stochastic processes. Results in the last fifteen years, particularly on non-Gaussian sequences and semi-parametric and non-parametric analysis have been reviewed. The first chapter gives a background of results on martingales and strong mixing sequences, which enable us to generate various classes of CAN estimators in the case of dependent observations. Topics discussed include inference in Markov chains and extension of Markov chains such as Raftery's Mixture Transition Density model and Hidden Markov chains and extensions of ARMA models with a Binomial, Poisson, Geometric, Exponential, Gamma, Weibull, Lognormal, Inverse Gaussian and Cauchy as stationary distributions. It further discusses applications of semi-parametric methods of estimation such as conditional least squares and estimating functions in stochastic models. Construction of confidence intervals based on estimating functions is discussed in some detail. Kernel based estimation of joint density and conditional expectation are also discussed. Bootstrap and other resampling procedures for dependent sequences such as Markov chains, Markov sequences, linear auto-regressive moving average sequences, block based bootstrap for stationary sequences and other block based procedures are also discussed in some detail. This work can be useful for researchers interested in knowing developments in inference in discrete time stochastic processes. It can be used as a material for advanced level research students.

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