

Binomial AR(1) process is a model for integer-valued time series with a finite range and discrete time. It has the binomial marginal distribution and the AR(1)-like autocorrelation structure. This thesis deals with deriving some basic properties of this process, methods of parameter estimation and goodness of fit testing. Three methods of parameter estimation are presented: Yule-Walker, the conditional least squares and the maximum likelihood method together with proofs of their asymptotical properties. Next, the goodness of fit testing is presented. At first, two known methods based on the marginal distribution and the autocorrelation function are summarized. Then our own method is added, based on the probability generating function. Several simulations are provided to show the properties of all tests. The application of this model is illustrated on a real dataset.