PREDICTION OF FUTURE OBSERVATIONS AND ESTIMATION OF THE PARAMETERS IN STOCHASTIC REGRESSION MODELS

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ABSTRACT

In this thesis, estimation of linear functions of the parameters in a stochastic regression model and the prediction of the vector of future observations related stochastically with a set of non-random variables, are considered. The minimum mean squared linear unbiased estimator and a class of shrinkage estimators of the parameters of interest are obtained. Properties of these estimators are examined analytically and numerically. However, analytic comparison of the estimators is not possible. Therefore, the estimators are compared by means of simulation. Our simulated results indicate that in the sense of mean squared error the shrinkage estimators are better than the minimum mean squared linear unbiased estimators.