

On regression model selection for the data with correlated errors

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Abstract A class of regression model selection criteria for the data with correlated errors is proposed. The proposed class of selection criteria is an estimator of weighted prediction risk. In addition, the proposed selection criteria are the generalizations of several commonly used criteria in statistical analysis. The theoretical and asymptotic properties for the class of criteria are established. Further, in the medium-sample case, the results based on a simulation study are quite consistent with the theoretical ones. The proposed criteria perform well in the simulations. Several applications are also given for a variety of statistical models.

Keywords Generalized cross-validation · Model selection · Nonparametric regression · Penalized likelihood · Smoothing splines