TWO FORMS OF AIC BASED ON MODIFIED LASSO

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Abstract. The least absolute shrinkage and selection operator (LASSO) is a popular technique for variable selection and estimation in linear regression models. Introduction of information criteria for LASSO can decrease the computational cost efficiently. So far the forms of some classic information criteria for LASSO are derived. In fact, there exists some regression matrix such that the ordinary LASSO may not select the correct model efficiently even by information criteria. In such situation, [9] introduced modified LASSO approach. In this paper, we introduce two forms of Akaike information criterion (AIC) based on modified LASSO estimation to help find the optimal tuning parameters for prediction and variable selection purposes respectively. The properties of those two forms are shown and a simulation study comparing these two forms is conducted.