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CORRECTED VERSIONS OF CROSS-VALIDATION CRITERIA FOR SELECTING MULTIVARIATE REGRESSION AND GROWTH CURVE MODELS

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Abstract. This paper is concerned with cross-validation (CV) criteria for choice of models, which can be regarded as approximately unbiased estimators for two types of risk functions. One is AIC type of risk or equivalently the expected Kullback-Leibler distance between the distributions of observations under a candidate model and the true model. The other is based on the expected mean squared error of prediction. In this paper we study asymptotic properties of CV criteria for selecting multivariate regression models and growth curve models under the assumption that a candidate model includes the true model. Based on the results, we propose their corrected versions which are more nearly unbiased for their risks. Through numerical experiments, some tendency of the CV criteria will be also pointed.

Key words and phrases: CV criterion, corrected versions, growth curve models, model selection, multivariate regression models, risk.

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