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Theoretical Comparisons with AIC and TIC

In many fields, Akaike’s information criterion (AIC) and Takeuchi’s information criterion (TIC) are frequently used for selecting the best model among the candidate models. The AIC was derived under the assumption that the candidate model is correctly specified, and the TIC was developed under the assumption that the candidate model is not necessarily correctly specified. In the present study, we discuss the theoretical difference between AIC and TIC through the asymptotic probabilities of selecting the true model by AIC and TIC. Especially, we focus on selections of mean and covariance structures.