



The University of Chicago
Department of Statistics

Seminars for Second Year Ph.D. Students

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The Extended BIC for Normal Regression and Other Models

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ABSTRACT

The Bayesian Information Criterion (BIC) for model selection is usually discussed in the problem of selecting a model from a finite number of covariates, when sample size tends to infinity. In modern applications, such as genetics, it is common for the number of covariates “ p ” to vastly exceed sample size “ n ”, and so these standard asymptotics do not apply. In a 2008 paper, Jiahua Chen and Zehua Chen showed that the Extended BIC will select the correct model even if p and n both tend to infinity. In further work, they also showed an analogous result for some generalized linear models. The first paper will be presented in detail, as well as an overview of the second result, and a new extension to graphical models.