Asymptotic Normality of the Maximum Likelihood Estimators in ANOVA Models

Fengnan Gao

Fudan University
E-mail: fngao@fudan.edu.cn

Abstract: We consider the maximum likelihood estimators in the ANOVA models with increasing dimensions. A clean sufficient condition and a clear and simple proof are presented for its asymptotic normality. The proof relies on formulating the problem as the root finding problem with Newton-Raphson algorithms being applied to the score function. An excursion may be made to include more general cases with as little conditions as possible imposed on the design for the asymptotic normality to hold.