

広島統計談話会
Hiroshima Statistics Study Group

第 243 回談話会を下記のように開催致しますので
御参集下さいますよう御案内申し上げます。

You are cordially invited to the 243rd meeting as scheduled below.

日 時 : 2008 年 11 月 7 日 (金) 15:00～
Date: November 7, 2008 (Fri) 15:00-

場 所 : 放射線影響研究所 比治山ホール
Place: RERF Hijiyama Hall

演 者 : 広島大学 名誉教授
藤 越 康 祝 博士
Speaker: Yasunori Fujikoshi, Ph.D.
Professor Emeritus
Hiroshima University

演 題 : 「混合効果モデルにおける推定と条件付赤池の情報量規準」
Title: “Estimation in Mixed-Effects Models and Conditional AIC”

要 約 :
Abstract:

In this talk, we are concerned with mixed-effects models (MEM) which are useful for analysis of repeated measures or longitudinal data. The models include random-coefficient model (RCM) and partial random coefficients model (PRCM) as important special cases. First we explain these models as well as usual linear regression models through a simple example.

The mean parameter in mixed models is estimated by the best linear unbiased estimator assuming that the variance parameter is known. The variance parameter may be estimated by the maximum likelihood estimator (MLE) assuming that the distribution of error terms is normal. However, it may be noted that the MLE is not always a solution of the score likelihood equation. On the other hand, a non-iterative method has been proposed for RCM by Vonesh and Carter (1987). We discuss the method to extend for PRCM and MEM.

We also discuss the problem of choosing candidate models. Recently Vaida and Blanchard (2005) proposed the use of conditional AIC (cAIC), not the conventional AIC based on the consideration of marginal likelihood, when the research focus is on individual or cluster. The cAIC is derived under the assumption that the variance of error terms and the scaled covariance matrix of random effects are known.

We derive a general cAIC under RCM and PRCM without these strong assumptions.