広島統計談話会

Hiroshima Statistics Study Group

第 308 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ご案内申し上げます。

You are cordially invited to the 308th meeting as scheduled below.

日　時：　　　2017 年 11 月 24 日（金）15:00 –
Date　:　　　November 24th, 2017 (Fri) 15:00 –

場　所：　　　放射線影響研究所　E-205 会議室
Place　:　　　RERF Conference Room E-205

演　者：　　　大石 峰暉 氏　（広島大学大学院 理学研究科 数学専攻 博士課程前期)
Speaker　:　　Mr. Mineaki Ohishi
　　　　　　　Department of Mathematics, Graduate School of Science, Hiroshima University

演　題：　　　「直交する説明変数での線形回帰モデルにおける最適な正則化パラメータの下での
　　　　　　　一般化リッジと adaptive-Lasso の推定値の同等性」
Title　:　　　"Equivalence under optimal regularization parameters between generalized ridge and
　　　　　　　adaptive-Lasso estimates in linear regression with orthogonal explanatory variables"

要　約：

Summary:

　　　　　We deal with an estimation of regression coefficients in a linear regression model with orthogonal explanatory variables. The generalized ridge (GR) regression is one of the estimation methods of regression coefficients of the model. When we use the GR regression for estimating regression coefficients, optimization problem of regularization parameters, i.e., ridge parameters, is very important because the GR estimates strongly depend on the parameters. The optimization problem can be solved by using model selection criterion (MSC) minimization method. Optimized ridge parameters derived from the method can give sparse estimates of regression coefficients. On the other hand, the adaptive-Lasso (AL) can estimate regression coefficients sparsely. When we use the AL for estimating regression coefficients, optimization problem of a regularization parameter, i.e., a tuning parameter, is very important because the AL estimate also strongly depend on the parameter. In this paper, we show equivalence between adaptive-Lasso and generalized ridge estimates in linear regression with orthogonal explanatory variables after optimizing regularization parameters.