

広島統計談話会
Hiroshima Statistics Study Group

第 317 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 317th meeting as scheduled below.

日 時 : 2019 年 6 月 7 日 (金) 15:00 –
Date : June 7, 2019 (Fri) 15:00 –
場 所 : 放射線影響研究所 講堂
Place : RERF Auditorium
演 者 : 廣瀬 慧 博士 (九州大学 マス・フォア・インダストリ研究所 准教授、
理化学研究所 革新知能統合研究センター (AIP) 客員研究員)
Speaker : Kei Hirose, Ph.D.
Associate Professor, Institute of Mathematics for Industry, Kyushu University
Visiting Scientist, RIKEN Center for Advanced Intelligence Project (AIP)
演 題 : 「正則化因子分析による単純構造推定」
Title : “Simple structure estimation via regularized factor analysis”

要 約 :

Summary:

We propose a prenet (product elastic net), which is a new penalization method for factor analysis models. The penalty is based on the product of a pair of elements in each row of the loading matrix. The prenet not only shrinks some of the factor loadings toward exactly zero, but also enhances the simplicity of the loading matrix, which plays an important role in the interpretation of the common factors. In particular, with a large amount of prenet penalization, the estimated loading matrix possesses a perfect simple structure, which is known as a desirable structure in terms of the simplicity of the loading matrix. Furthermore, the perfect simple structure estimation via the prenet turns out to be a generalization of the k-means clustering of variables. On the other hand, a mild amount of the penalization approximates a loading matrix estimated by the quartimin rotation, one of the most commonly used oblique rotation techniques. Thus, the proposed penalty bridges a gap between the perfect simple structure and the quartimin rotation.