

広島統計談話会  
Hiroshima Statistics Study Group

第 314 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 314<sup>th</sup> meeting as scheduled below.

日 時 : 2018 年 11 月 30 日 (金) 15:30 –  
Date : November 30, 2018 (Fri) 15:30 –  
場 所 : 放射線影響研究所 E-205 会議室  
Place : RERF Conference Room E-205  
演 者 : 寺田 吉彦 博士 (大阪大学大学院 基礎工学研究科 助教  
理化学研究所 革新知能統合研究センター 客員研究員)  
Speaker : Yoshikazu Terada, Ph.D.  
Assistant Professor, Graduate School of Engineering Science, Osaka University  
Visiting Researcher, RIKEN Center for Advanced Intelligence Project (AIP)  
演 題 : 「関数データに対する部分空間クラスタリングとその漸近的性質について」  
Title : “Subspace clustering for functional data ~Achieving near perfect classification even  
in unsupervised learning~”

要 約 :

**Summary:**

In various fields, data recorded continuously during a time interval and curve data such as spectral data become common. These kinds of data can be interpreted as "functional data." The statistical methodology for such data is called Functional Data Analysis (FDA). Functional data have the intrinsic high dimensional nature. This nature often makes possible the very good performance in supervised classification for functional data. In the supervised classification problems, it is known that, using the projection into the finite-dimensional subspace, we can extract the intrinsic high dimensional nature from functional data. In the context of unsupervised classification, there are several clustering methods based on the projection into the subspace. However, since these methods mainly focus on within-cluster variance or dimension reduction, the projected data do not necessarily reflect the hidden true cluster structure. In this talk, a new subspace clustering method for functional data is proposed, which is based on a novel cluster-separation criterion in the finite-dimensional subspace. The proposed method works well not only for the simulated data, but also for the real datasets which are difficult to obtain a good classification performance by the existing methods.