You are cordially invited to the 310th meeting as scheduled below.

**Date:**
2018年5月25日（金）15:00 –
May 25th, 2018 (Fri) 15:00 –

**Place:**
放射線影響研究所 講堂
RERF Auditorium

**Speaker:**
荒木 由布子 博士（静岡大学大学院総合科学技術研究科・情報学専攻 准教授）
Yuko Araki, Ph.D. 
Associate Professor
Graduate School of Integrated Science and Technology, Shizuoka University

**Title:**
「高次元データのための関数データ判別と構造方程式モデリング」
“Functional classification method and structural equation modeling for high dimensional data”

**Summary:**
Recent years have seen that functional data analysis is capable of extracting intrinsic features from recently-arising complicated and high dimensional data, such as three dimensional brain sMRI, time course microarray data, or hundreds of records of human gait, for example. We introduce a functional classification model for classifying individuals with high dimensional covariates. We also talk about how to describe the direct and indirect dependencies among a set of variables including high dimensional covariates. The proposed method is based on extended basis expansions with the help of sparse PCA. Further, L1-type penalty constraints are imposed in the estimation of parameters of logistic discrimination. This two-step regularization method accomplishes both covariate selection and estimation of unknown model parameters simultaneously. The crucial issue is how to select the regularization parameters used in model estimation. We propose a model selection criterion based on an information criterion. The proposed models are applied to real-data examples and Monte Carlo simulations are conducted to examine the efficiency of our modeling strategies.