

Functional Principal Component Logistic Regression

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Abstract

Over the last few years many methods have been developed for analyzing functional data with different objectives. The purpose of this talk is to present the functional logistic regression model to predict a binary response variable in terms of a functional variable whose sample information is given by a set of curves measured without error. In order to estimate this model an approximation of the sample paths and the parameter function in a finite dimensional space generated by a basis will be proposed. Then, the problem is reduced to a multiple logistic regression model with highly correlated covariates. In order to reduce dimension and to avoid multicollinearity, two different approaches of functional principal component analysis of the sample paths are proposed.