

Titel:

Points of Impact in Generalized Linear Models with Functional Predictors

Abstract:

We introduce a generalized linear regression model with functional predictors. The predictor trajectories are evaluated at a finite set of unknown points of impact, which are treated as additional model parameters that need to be estimated from the data. We propose a threshold-based and a fully data-driven estimator, establish the identifiability of our model, derive the convergence rates of our point of impact estimators, and develop the asymptotic normality of the linear model parameter estimators. The finite sample properties of our estimators are assessed by means of a simulation study. Our methodology is motivated by a psychological case study, where participants were asked to continuously rate their emotional state during watching an affective video on the persecution of African albinos.

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