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Variable Selection in Multipath Change-point Problems

Follow-up studies are frequently carried out to study evolution of one or several measurements taken on some subjects through time. When a stimulus is administered on subjects, it is of interest to study the reaction times, change-points. One may want to select the covariates that accelerate reaction to the stimulus. Selecting effective covariates in this setting pose a challenge when the number of covariates is large. We develop such methodology and study the large sample behavior of the method. Small sample behavior is studied by the means of simulation. The method is applied to a Parkinson disease data set.