Change detection for time series following generalized linear models

Edit Gombay

University of Alberta

The models considered in this talk are of great practical importance as they are used in measuring health care performance, evaluating financial markets, analysing industrial processes, and in climate studies. We survey recent theoretical developments concerning logistic and other regression models that allow AR(p)-type dependence structure together with the presence of covariates. Conditions are set for the Maximum Partial Likelihood Estimator's existence and its convergence to the true value. We can prove that this convergence is at the optimal rate. The performance of the score vector of the partial likelihood function is analysed. We can use it for change detection and in sequential monitoring. Its usefulness will be demonstrated on data from clinical studies.