

Title: Optimal inference in linear model with multiple change-points.

In this communication, we will present an estimation problem in linear model with multiple change-points which are unknown, under the scenario of an uncertain prior information on the regression coefficients. In this investigation, the regression coefficients are the parameters of interest subspace while the "change-points" are treated as nuisance parameters to be estimated as well. We relax some assumptions, which are commonly given in literature, about the linear model with change-points, and we derive the asymptotic properties of the the unrestricted and the restricted estimators. Further, we propose a class of shrinkage estimators which include as special cases the unrestricted and the restricted least square estimators as well as James-Stein type estimators. The proposed methodology works for both matrix and vector parameters cases.