

عنوان مقاله:

Isotonic Change Point Estimation in the AR(1) Autocorrelated Simple Linear Profiles

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 28، شماره 7 (سال: 1394)

تعداد صفحات اصل مقاله: 9

نویسندگان:

f Vakilian - *Industrial Engineering Department, Shahed University, Tehran, Iran*

a Amiri - *Industrial Engineering Department, Shahed University, Tehran, Iran*

f Sogandi - *Industrial Engineering Department, Shahed University, Tehran, Iran*

خلاصه مقاله:

Sometimes the relationship between dependent and explanatory variable(s) known as profile is monitored. Simple linear profiles among the other types of profiles have been more considered due to their applications especially in calibration. There are some studies on the monitoring them when the observations within each profile are autocorrelated. On the other hand, estimating the change point leads to meet great saving time and costs. Hence, in this paper, a maximum likelihood estimator is derived for simple linear profiles with first order autoregressive autocorrelation structure within each profile to estimate isotonic change point. The performance of the proposed estimator is appraised and compared to estimators that derived under step change and drift and a confidence set estimator presented. The results demonstrate that the proposed estimator has better performance in small and medium shifts whereas the performance of their corresponding estimators becomes better than the proposed estimator in large shifts. It is worth mentioning that knowing type of the change is not important in the proposed estimator and its only assumption is belonging of the change type to a family of isotonic shifts. Finally, the performance of the estimator is illustrated through a real case

کلمات کلیدی:

Simple Linear Profile , Isotonic Shift , Change Point Estimation , AR(1) Models , Phase II , Hotelling T2Control Chart

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/406386>

