ABSTRACT

In many situations the process quality is categorized by some relation that may set up between the response variable and explanatory variables in the form of linear profile. To check the stability of their relationship, monitoring of linear profile method is used. In this dissertation, we have investigated methodology based on simple linear profile using different proposed run rules schemes. For process monitoring, the application of run rules scheme with control charts is an attractive method for monitoring of linear profile. We have considered memory-type chart, namely EWMA chart for intercept, slope and standard deviation to monitor the linear profile separately. Monte Carlo simulations were used for proposed schemes which identifies the shifts as soon as it happens in the given process. By using ARL, SDRL, CVRL and MDRL, the performance of proposed schemes were inspected. The outcomes were compared with the results of Kim et al. (2003). The results show that proposed schemes are more sensitive to the small and moderate shifts at ARL$_0$ = 200 and 500 with δ = 0.1 and 0.2 considered in the study.