

ABSTRACT

The efforts have been made to develop a more efficient method for monitoring of simple linear profiles in Phase-II. The aim of the study is to detect small to moderate changes taking place in the intercept, slope and error variance. This new monitoring scheme has been developed by applying the run rule scheme to the Bayesian study, using the Normal conjugate priors for the intercept and slope and Inverse Gamma Distribution as conjugate prior for error variance as proposed by Abbas et al. (2016). The monitoring was done by using the EWMA control charts independently for the intercept, slope and error variance. Average Run Length (ARL), Median Run Length (MDRL), Standard Deviation Run Length (SDRL) and Coefficient of Variation Run Length (CVRL) have been computed for the Monte Carlo simulation study. The results of the performance measures were compared with the measures of the classical simple linear profiles. It was found using the simulation study that the results of two-by-three run rule scheme under Bayesian system for smoothing constant, $\lambda_{\text{smooth}} = 0.1$ are more sensitive to small to moderate shifts than the rest of the run rule schemes used in our study.