

In production, it is common to deal with short production runs, where flexibility is required in the built-up of parts to produce numerous variants of manufactured goods. Monitoring the multivariate coefficient of variation (MCV) is an effective method to monitor the relative multivariate variability compared with the mean. Monitoring the relative multivariate variability is important when practitioners are not interested in the changes in the mean vector or the covariance matrix. Monitoring the univariate coefficient of variation in short production runs has already been successfully executed. In this paper, the statistical performance of one-sided charts for monitoring the MCV of a multivariate process with finite horizon is investigated. Prior to this work, no attempt has been made to study process monitoring of MCV in short production runs. Investigations are made when the exact shift size can be specified and when there is a random shift size. It is found that the proposed upward chart detects an increasing shift in the MCV quicker than its downward counterpart detects a decreasing shift, for the same shift size (from the nominal value). An example is presented to illustrate the implementation of the new method.