ABSTRACT

Method of Process Trend Matching for Identification of Process Variable

A method that involves matching the trend of process outcome with the trend of process variables to identify the variables that have an impact on the process outcome is disclosed. The method for process trend matching comprises processing of raw data of process outcome and of process variables using an outlier filtering method, smoothing these data using common smoothing algorithm like Kernel, dividing smoothed raw data equally into time intervals, computing the gradients of the points at both ends of the time intervals, and translating the gradients into a scale based on the magnitude of the gradients. The following steps comprise to compare the process outcome and each process variable independently for same time frame, and assign a score for both outcome and variable. The sum of the scores is then computed which is used to determine the quality of fit. A real-time monitoring system is then set up to monitor these variables for any drifts. When a drift is detected, troubleshooting activity will be triggered and actions taken to resolve the drift, after which monitoring of the variable will be restarted.

(Figure 2)