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Abstract:

Title: Rethinking control chart design and evaluation

We discuss some practical issues involving the control of the number of false alarms in process monitoring. This topic is of growing importance as the number of variables being monitored and the frequency of measurement increase. An alternative formulation for evaluating and comparing the performance of control charts is given based on defining in-control, indifference and out-of-control regions of the parameter space. Methods are designed so that only changes of practical importance are to be detected quickly. This generalization of the existing framework makes control charting much more useful in practice, especially when many variables are being monitored. It also justifies to a greater extent the use of cumulative sum (CUSUM) methods.