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Riverside, CA 92521. *Efficient Global Monitoring Statistics for High-Dimensional Data.*

Global monitoring statistics play an important role in developing efficient monitoring schemes for high-dimensional data. A number of global monitoring statistics have been proposed in the literature. However, most of them only work for certain types of abnormal scenarios under specific model assumptions. How to develop global monitoring statistics that are powerful for any abnormal scenarios under flexible model assumptions is a long-standing problem in the statistical process monitoring field. To provide a potential solution to this problem, we propose a novel class of global monitoring statistics. Our proposed global monitoring statistics are easy to calculate and can work under flexible model assumptions since they can be built on any local monitoring statistic that is suitable for monitoring a single data stream. Our simulation studies show that the proposed global monitoring statistics perform well across a broad range of settings, and compare favorably with existing methods. (Received August 28, 2019)