



Fig. S3. Monitoring charts of Case 3: (a) RPCA is unable to track the normal changes and monitor the system accurately; (b) RSFA cannot track the rapid changes in the entire dataset and the fault is misjudged as normal variations. The FDR is less than 20% and the FAR is 10.69%; (c) RCA is not able to detect this abnormality and the FDR is less than 20%; (d) z_6 is faulty and it is irrelevant to cointegration relationship. Thus, the FDRs of T_f^2 and T_e^2 approach 0 for the proposed ACA-RPCA-EWC method. The FDRs of $T_{rpcaewc}^2$ and $SPE_{rpcaewc}$ are 100%, and it indicates that the fault is detected accurately. However, the FDR of SPE_{rpca} is 0, which means that RPCA-EWC performs better than RPCA and the learned knowledge retained by EWC is beneficial for building an accurate RPCA model.