Poster Session
14-15th, July

Iterative Optimization of Process Monitoring and Fault Detection for Industrial Processes
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This presentation will provide a solution for real-time and iterative optimization of process monitoring and fault detection for industrial automation applications. To this end, minimum variance estimation in terms of recursive least square (RLS) or Kalman filter by iterative interactions with the process environment is addressed first to generate residual signals with a minimum variance. The optimal fault detection is then realized to provide the timely and optimal detection of potential problems by adopting these real-time minimum variance estimation schemes. For experimental tests, the iterative optimization of RLS estimation and Kalman filter, and their applications to fault detection are illustrated by a numerical example and a laboratory three-tank system study, respectively.