

### Fault Diagnosis of the Tennessee Eastman Process based on Kalman Filter

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In this study, the linear system model using Kalman filter is applied for the multiple fault diagnosis of the Tennessee Eastman process. Among a variety of fault diagnosis approaches for chemical process, Kalman filter have been selected as tools for dealing with unknown states and uncertainties. In order to detect fault when failure occurs, the residual function must be determined and then the Kalman filter is designed to diagnosis the fault type. These derived residual functions has been linearized so that when failure occurs it can accommodate its failure. Currently, this model is being constructed and after several experiments, we expect to confirm the effectiveness of the designed fault detection.