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## Sliding Mode Observer Based Robust Fault Detection and Isolation

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By Almusawi, Hawraa Fouad

Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Fault Detection and Isolation Based on A Hybrid Sliding Mode Observer and Fuzzy Logic | The early detection and isolation of the faults in a systems be difficult when a failure occurs. This is due to several factors, including the large number of elements which designed such systems and complexity of interdependence which is sometimes difficult to understand. This book has proposed a method more suitable for early detection and isolation of faults, this method is based on a combination between analytical based technique (sliding mode observer ) and knowledge based technique (fuzzy logic controller). The sliding mode observer technique was used for the fault detection purpose based on residual signal which represent the difference between output of the process and output of the model that used as a fault indicator, while the fuzzy logic technique was used as a fault isolator depending on fuzzy rules base and fuzzy membership functions. The performance of this hybrid technique is evaluated on a model of DC motor, the proposed scheme is illustrated on a Matlab/Simulink simulator and the results demonstrated a successful implementation of the proposed FDI scheme. This book deals with additive faults, these faults can...



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