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On Fault Diagnosis of Asynchronous Sequential Machines with Parallel Composition

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Abstract : Fault diagnosis of composite asynchronous sequential machines with parallel composition is addressed in this paper. An adversarial input can infiltrate one of two submachines comprising the composite asynchronous machine, causing an unauthorized state transition. The objective is to characterize the condition under which the controller can diagnose any fault occurrence. Two control configurations, state feedback and output feedback, are considered in this paper. In the case of output feedback, the exact estimation of the state is impossible since the current state is inaccessible and the output feedback is given as the form of burst. A simple example is provided to demonstrate the proposed methodology.

Keywords : asynchronous sequential machines, parallel composition, fault diagnosis, corrective control
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