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Fault Identification in an Electro-Hydraulic Actuator and Experimental Validation of Prognosis Based Life Extending Control

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In this paper we present an application of fault identification and control reconfiguration in the context of a high performance aircraft. A second order divided difference filter is used to identify an internal leakage fault in an electro-hydraulic actuator found in the aircraft elevator. The identified fault information is then utilized in the formulation of an aircraft systems model for prognosis-based control. An optimization based reconfiguration strategy is presented to minimize degradation of the fault in presence of performance, actuation, and mission constraints. The strategy is then validated through Hardware-in-the-Loop Simulations.

Ключевые слова:

Содержание.

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