

Martínez-Guerra, R.; González-Galan, R.; Luviano-Juárez, Alberto; Cruz-Victoria, J.
Diagnosis for a class of non-differentially flat and Liouvillian systems. (English)

Zbl 1153.90005

IMA J. Math. Control Inf. 24, No. 2, 177-195 (2007).

Summary: We tackle the diagnosis problem for non-differentially flat and Liouvillian systems by using the concept of differential transcendence degree of a differential field extension, as well as, we consider the algebraic observability concept of the variable which models the failure presence for the solvability of the diagnosis problem. The construction of a reduced-order uncertainty observer to estimate the fault variable is the main ingredient in our approach. Finally, we present a simulation example dealing with a ship in smooth landing to illustrate the effectiveness of the suggested approach.

MSC:

90B25 Reliability, availability, maintenance, inspection in operations research

93B07 Observability

93B28 Operator-theoretic methods

Cited in **5** Documents

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