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Damage Detection from Correlations in Kalman Filter Innovations: Difficulties from Variability in the Noise Statistics

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Deviations from whiteness in the innovations of a Kalman filter indicate that the filter is not optimal for the given data. Lack of optimality is connected with discrepancies between the parameters used to formulate the filter and the values that prevail at the time of interrogation. This paper examines the importance that changes in the noise statistics may have on the ability of the filter to function as a damage detector. Analysis and numerical results show that even modest changes in the noise statistics can have a significant impact on the detection of low levels of damage.

Ключевые слова:

Содержание.
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