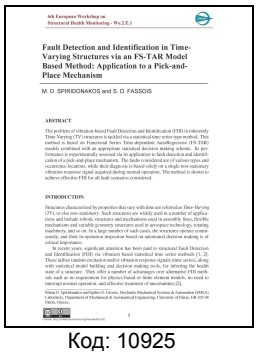

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Fault Detection and Identification in Time-Varying Structures via an FS-TAR Model Based Method: Application to a Pick-and-Place Mechanism

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The problem of vibration-based Fault Detection and Identification (FDI) in inherently Time-Varying (TV) structures is tackled via a statistical time series type method. This method is based on Functional Series Time-dependent AutoRegressive (FS-TAR) models combined with an appropriate statistical decision making scheme. Its performance is experimentally assessed via its application to fault detection and identification of a pick-and-place mechanism. The faults considered are of various types and occurrence locations, while their diagnosis is based solely on a single non-stationary vibration response signal acquired during normal operation. The method is shown to achieve effective FDI for all fault scenarios considered.

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Ключевые слова:

Содержание