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Model-Free Damage Identification of Skeletal Structures

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This paper presents and verifies experimentally a model-free methodology for off-line damage identification of truss structures. The Virtual Distortion Method (VDM) is used, which allows the approach to be based entirely on experimentally obtained non-parametric characteristics of the monitored structure, so that no parametric numerical modeling is necessary. The damage is modeled using certain damage-equivalent pseudo-loads, which are convolved with experimentally obtained local responses of the original structure to compute the response of the damaged structure. An effective sensitivity analysis is possible via the adjoint variable method.

Ключевые слова:

Содержание.

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