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Damage Assessment of Structures with Uncertainty

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Evolutionary algorithms are suitable to solve damage identification problems in a multiobjective context. However, the performance of these methods can deteriorate quickly with increasing noise intensities originating numerous uncertainties. In this work, a statistic structural damage detection method formulated in a multiobjective context is proposed, taking into account the uncertainties existing. The presented method is verified by a number of simulated damage scenarios. The effects of noise on damage detection are investigated.

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Ключевые слова:

Содержание

Abstract
Introduction
Objective functions
Evolutionary multiobjective optimization
Probability of damage existence (PDE)
Numerical simulation study
Conclusions
Acknowledgements