



Код: 10783

C. Haynes, M. Todd

Bayesian Experimental Design for Damage Detection in a Bolted Frame

Дрезден, Германия, 2012 год

8 стр; формат: 23,5 x 16 см; библиографический список: 6 единиц

In order to design an appropriate structural health monitoring system, it is crucial to develop a methodology that incorporates the costs of each possible decision/action able to be taken with respect to each target damage state of the structure. To that end, this paper presents a framework based on Bayesian experimental design for choosing the optimal system for a given scenario. The cost parameters that govern the optimization are varied to represent different criteria that arise in different applications. Among these are situations where Type I error control is critical, where Type II error minimization is most important, and where minimal sensor count is critical. The proposed approach is then applied to data obtained from ultrasonic interrogation of a geometrically-complex, three-story frame structure with bolted joints.

Доклад. 6-я Европейская конференция по мониторингу технического состояния сооружений, 2012. Редакция Кристиана Боллера.

Ключевые слова:

Содержание.

- Abstract
- Introduction
- Experimental procedure
- Feature extraction
- Bayesian experimental design theory
- Bayesian experimental design results
- Conclusions