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Probabilistic Proper Orthogonal Decomposition
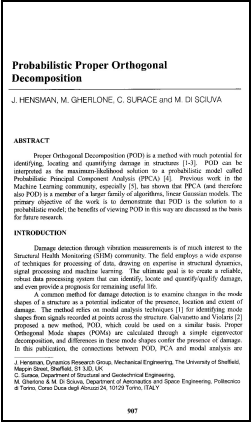
Proper Orthogonal Decomposition (POD) is a method with much potential for identifying, locating and quantifying damage in structures [1-3]. POD can be interpreted as the maximum-likelihood solution to a probabilistic model called Probabilistic Principal Component Analysis (PPCA) [4]. Previous work in the Machine Learning community, especially [5], has shown that PPCA (and therefore also POD) is a member of a larger family of algorithms, linear Gaussian models. The primary objective of the work is to demonstrate that POD is the solution to a probabilistic model; the benefits of viewing POD in this way are discussed as the basis for future research.

Ключевые слова:

Содержание.
Probabilistic Proper Orthogonal Decomposition