

New Solutions in Experimental Modal Analysis of Mechanical Structures

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One of the most intensive investigated problem in modal analysis is automation of identification procedure. In the area two main problems can be distinguish: – identification of modal properties of the mechanical systems if structure of model is not known (model order, location of excitation, predicted mode shapes, etc.) – tracking of modal parameters during structure operation (real time modal analysis). Both problems are under investigation at the University of Science and Technology – AGH from many years. Proposed methods and software tools helping to solve above problems are presented in the paper. The methods formulation, simulation and experimental validation are discussed. Case studies on application of methods for modal analysis and diagnostics for complex mechanical structures (airplane and civil structure) are shown.

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