

Application Of In-Operation Modal Analysis In Diagnostics Of Machinery

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ABSTRACT:

In the paper an application of modal analysis for diagnostics of machinery is presented. Most diagnostic systems currently in use allow determining the health of machinery using a symptom approach. But if a fault is detected its localisation and assessment is necessary to give information for service and preventive maintenance. One possible solution is the application of model based diagnostics. In many cases the structural model can be directly applied. One of the structural dynamics models of machinery which is widely used is modal model. In – operation modal analysis technique can be used for structural health monitoring In this paper in-operation modal analysis technique is explained and procedure of modal testing realisation is formulated. The implementation of the modal analysis technique in monitoring systems is shown. As a case study application of presented procedure for diagnostics of a large fan is shown.

Keywords: modal analysis, machinery diagnostics, monitoring system