EXPERIMENTAL VERIFICATIONS ON SDM USING UPDATING FINITE ELEMENT MODEL

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Abstract

An updated finite element model of the drilling machine using analytical and experimental results and to use this updated model to prevent the effect of Structural Dynamic Modifications (SDM) on model properties of the machine. This model updating has been applied using indirect method, Sensitivity based Bayesian parameter estimation technique has been applied. On drilling machine model test was conducted using random noise generator. Identification of the experimental frequency response functions has been carried out using global method. Analytical finite element modeling of the drilling machine using beam elements and results has been correlated with experimental results. After correlation, the analytical finite element modal has been used for computer level modifications and effects of lumped mass can be studied on updated model. This model is compared with dynamic test results and the results have found to be satisfactory.