

**Title:** A model updating technique based on FRFs for damped structures

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**Abstract:** Model updating methods often neglect that in fact all physical structures are damped. Such simplification relies on the structural modelling approach, although it compromises the accuracy of the predictions of the structural dynamic behaviour. In the present work, the authors address the problem of finite element (FE) model updating based on measured frequency response functions (FRFs), considering damping. The proposed procedure is based upon the complex experimental data, which contains information related to the damped FE model parameters and presents the advantage of requiring no prior knowledge about the damping matrix structure or its content, only demanding the definition of the damping type. Numerical simulations are performed in order to establish the applicability of the proposed damped FE model updating technique and its results are discussed in terms of the correlation between the simulated experimental complex FRFs and the ones obtained from the updated FE model.

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