

VibeSys

Modal Analysis

Product Overview:

Modal Analysis is a specialized product option within nCode VibeSys that provides the ability for engineers to answer questions such as:

- What are the modal frequencies?
- What are the modal damping ratios?
- What is the mode shape at a specific frequency?
- How good is a modal FE simulation compared to a modal test?

The objective of Experimental Modal Analysis is to curve fit a Frequency Response Function using a model which properties are linked with the modal parameters. The challenge is to have a robust algorithm, insensitive to noise and capable of accounting for the out-of-band modes. Operating Deflection Shapes provides the ability to animate a geometry based on measurements or from modal properties. The model can be animated from time series, FRF spectra or a modal table.

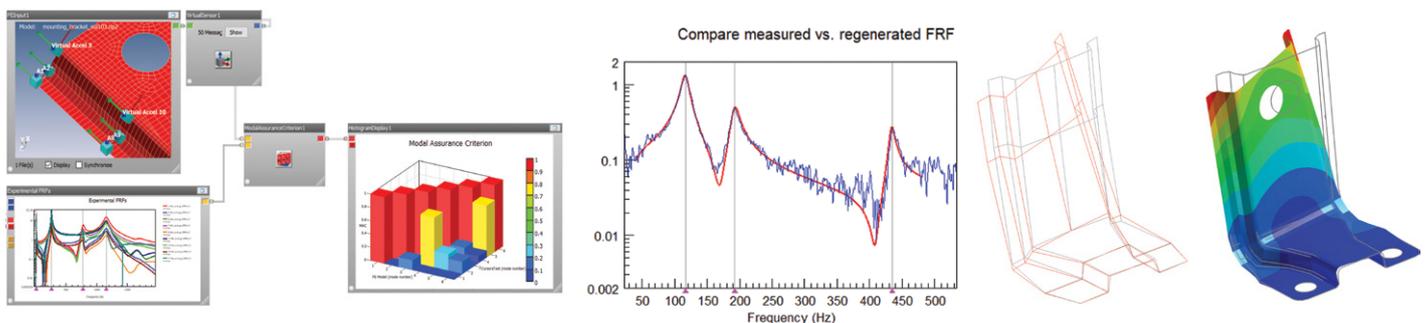
Characterize the dynamics of your components with ease

Key Benefits:

- Enhance FE modelling by providing more accurate damping ratios
- Validate FE results by comparing modal frequencies and mode shapes with the experimental tests
- Rapidly compare different designs in terms of their dynamic properties
- Troubleshoot Noise and Vibration problems
- Perform Structural Health Monitoring by tracking changes in modal parameters due to damage

Key Features:

- Experimental Modal Analysis identifies modes of vibration and extract modal parameters
- Operating Deflection Shapes to visualize the vibration patterns of a structure
- Flexible inputs such as FRF to animate mode shapes or time domain signals to display operational displacements
- Validate FE modelling using Modal Assurance Criterion (MAC) analysis
- "AutoMAC" matrix to help position virtual sensors and optimize physical instrumentation to capture the modes of interest



© 2019 HBM United Kingdom Limited (an affiliate of HBM Prenscia Inc.), at Technology Centre, Advanced Manufacturing Park, Brunel Way, Catcliffe, Rotherham S60 5WG, UK. All Rights Reserved. nCode® and VibeSys® are all trademarks of HBM United Kingdom Limited. All other product names, logos, trademarks, and service marks are the property of their respective owners.