

Brake Squeal Analysis with ANSA and META

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Engineers working on brake systems often come across the challenge to reduce the squeal noise of brakes, that may be caused due to the simultaneous contribution of various parameters such as Pressure, Working Temperature, Rotational speed and Friction coefficient of the contact surfaces. BETA CAE Systems provides a combined plug-in in ANSA and META in order to streamline the treatment of several experiments occurring from the combination of the aforementioned variables. In ANSA the whole procedure can be set up using a common model that will output directly all of the necessary experiments, combining different values for the examined variables using the Latin Hypercube algorithm. META provides the user the ability to investigate all unstable modes of all experiments in a common plot and calculate the Component Contribution Factors (CCF) and the Component's Modal Contribution Factors (CMCF) on problematic frequencies of any experiment. When the whole evaluation process is complete, all of the resulting contribution plots can be automatically added in a PPTX/PDF report. This demo will show the combined process through the respective ANSA and META plug-ins, providing hints on how to extract the experiments from the common model and evaluate the results of all experiments leading to a full report of the examined variations.