CATIA PLM Express

CATIA - Generative Structural Analysis

Early assessment of product mechanical behavior

Engineers need to optimize product design without sacrificing quality. They need to perform accurate analysis early in the design phase within an integrated and an easy to use environment.

Overview

CATIA - Generative Structural Analysis offers designers and engineers an easy-to-use analysis solution for simulating product mechanical behavior in the early phase of the design process.

Customer Benefits

- Easy to use and to understand analysis environment that enables designers and engineers to inspect product quality
- Early product simulation reduces costs by helping detect problems at the beginning of the design process
- Productivity gains thanks to a common environment that enables seamless analysis-design iterations

Key Capabilities

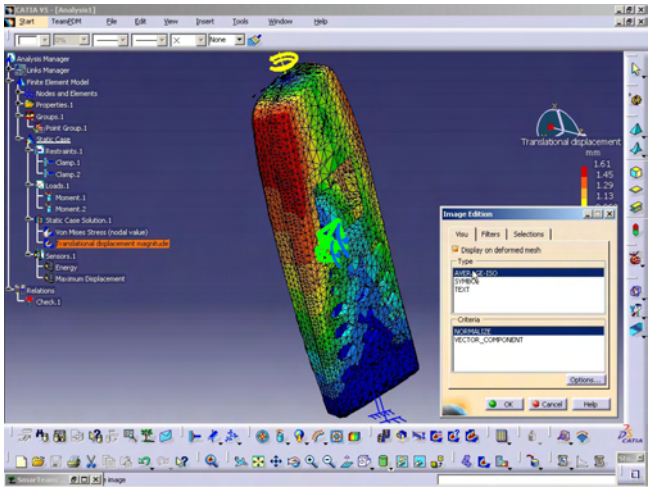
Linear stress and modal analysis on part and hybrid assemblies
It allows performing associative stress and vibration analysis on parts and assemblies including contact analysis for the assessment of mechanical behavior. It enables local refinement of stress computation with adaptive techniques

Easy to use pre and post processing capabilities
Through a simple selection of geometric features, users can define how a part is restrained and its associated loads. These specifications are then automatically translated into a finite element model, allowing users to avoid working with complex Finite Element Model definitions. It helps to understand the results of an analysis by graphically displaying areas of high stress and displacement. Values such as Von Mises stress criteria, displacement and principal stresses are mapped onto the deformed 3D part

Automatic mesh generation and smart adaptive mesher
Users get a transparent and automated approach to part stress analysis and modal frequencies analysis in a very intuitive environment. Each part is directly meshed and all connections are automatically generated to insure mechanism consistency as a result of a unique joining technology

Robust and automatic generation of connection elements
Multiple types of connections are available including face-to-face, welding and general connections types. The elements, properties and capabilities such as damping, smoothing, rigidity, contact etc. of these connections can be customized in order to create a more realistic and accurate finite element model

Associativity between design and analysis specifications
As a result of the native design-analysis integration, users can easily perform stress and displacement analysis of designs, using a consistent user interface, at any time in the design process. The association of analysis specifications, such as loads and restraints, with the design ensures users can work quickly and consistently. Users can size and validate their designs early in the development cycle, saving time and improving quality



Screen capture of CATIA - Generative Structural Analysis

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