

Altair MotionView is a user-friendly and intuitive multi-body systems modeling environment. Its built-in parametric modeling capability and open architecture allows users to quickly build, analyze, and improve mechanical system designs even before physical prototypes are available. Coupled with a next generation solver in MotionSolve, MotionView provides a perfect solution for your multi-body dynamics simulation needs.

Product Highlights

- Intuitive and solver neutral environment for multi-body systems modeling
- Hierarchical modeling
- Built-in parametric modeling for efficient studies on model variations
- Extensible GUI and data model to support local customization
- Free data management with HyperWorks Collaboration Tools

Benefits

Accelerate Product Innovation

With MotionView you can build parametric models, assess alternative designs, and optimize designs to meet the product objectives.

Reduce Product Design Time and Cost

You can evaluate products early in the development cycle with MotionView's physics-based simulation capabilities. Furthermore, you can build a model once, validate it and reuse it in different contexts.

Improve Product Quality

MotionView allows you to easily conduct what-if analyses and stochastic simulations to characterize and optimize product behavior and mitigate the effects of manufacturing variations on product performance.

Enforce Corporate Quality Standards

MotionView can capture your company's know-how as repeatable processes to ensure usage consistency. You can customize

the user interface to meet your needs, use automation capabilities to reduce repetitive procedural tasks and standardize and share subsystems, system models, and data files with other users.

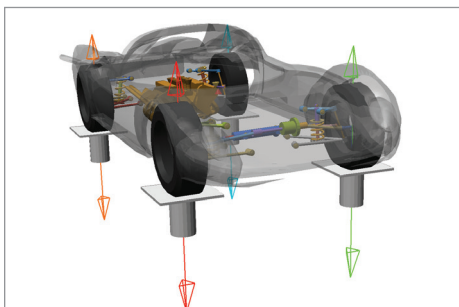
Capabilities

Powerful Modeling Environment

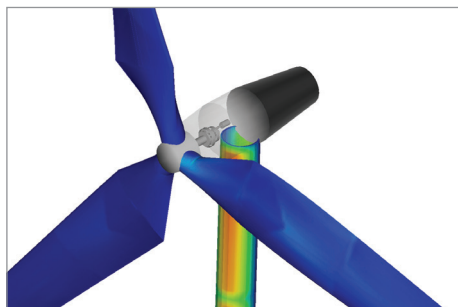
MotionView contains many capabilities designed to simplify the creation of complex mechanical models.

- A hierarchical modeling structure to understand model composition
- Parametrics to facilitate downstream DOE and optimization studies
- Built-in support for symmetry planes to minimize input
- Conditional logic to enable multiple topology configurations within a single system model
- A macro language that, based on user input, generates parametric sub-system models

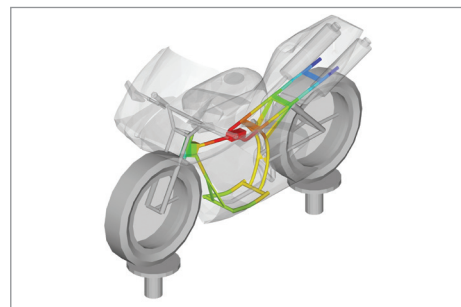
Learn more:
altairhyperworks.com/motionview



Four post shaker simulation



Wind turbine flex-body simulation



Motorcycle ride analysis

- Automated system assembly via a wizard that reduces model assembly to just a few mouse clicks
- Easy import of test data into the multi-body system model
- Easy import of CAD geometry to create the system model; all popular formats are supported

Intuitive User Interface

MotionView's intuitive user interface allows experienced and novice engineers to build and analyze multi-body systems rapidly.

- Built-in workflows to simplify and standardize mechanical systems modeling
- A modern user interface with context menus in the graphics window
- A project browser with context sensitive menus, find and filtering options ensuring easy model navigation
- A wide variety of graphically accessible tools to create, modify, and manipulate models easily

Automation and Customization

MotionView is completely customizable. You can modify MotionView to meet your needs.

- Build custom objects with MotionView's unique Model Definition Language
- Create custom panels and menus to graphically create custom objects
- Send models to solvers and retrieve results
- Use scripting to automate repetitive modeling tasks and minimize mouse actions
- Export component loads in FE & fatigue formats for downstream component design, strength, fatigue, and optimization calculations
- Generate reports to communicate system performance with others in your team

Easy Flex-body Generation and Usage

MotionView provides a simple yet powerful set of tools to create flexible bodies in your model.

- Easily import reduced finite element models to represent flexible bodies
- Perform error checking to identify and diagnose modeling errors
- Connect flexible bodies to a multi-body system model
- Convert a rigid component to flexible and vice-versa
- Mirror flexible bodies about a plane of symmetry to facilitate data reuse

A Comprehensive End-to-end Solution

MotionView supports the MODEL—ANALYZE—REVIEW—OPTIMIZE paradigm of use for multi-body systems. In a single environment you can perform all of your tasks – no need to switch between products.

- **MODEL:** Create or assemble complex multi-body models graphically
- **ANALYZE:** Send a validated model to a multi-body solver to run a simulation. MotionSolve and ADAMS are natively supported
- **REVIEW:** Analyze and correlate simulation results to test data, compute performance metrics, plot results, view animations, create and publish reports summarizing model behavior
- **OPTIMIZE:** Execute DOE, optimization, and stochastic studies through HyperStudy® to understand system behavior; optimize components with OptiStruct®

Industry Specific Capabilities

In addition to the standard set of model management options, MotionView provides specialized tools for various industries.

Automotive

MotionView supports a comprehensive library of higher-level, automotive-specific modeling entities such as tires, roads, drivers, springs, bushings, bump-stops, dampers, that are required for building vehicle models. You may add your own components to the built-in set. In addition, MotionView supports model and task assembly wizards. With just a few mouse clicks you can assemble a fully parametric vehicle with your selection of front and rear suspension topologies, a full IC engine powertrain, choice of tires, smooth and rough roads and simulate any of the standard suspension and driving events. Component loads can be sent for downstream strength or durability analysis. Simulation reports are automatically generated.

General Machinery

With MotionView you can import CAD and FE geometry to quickly build your system. All popular formats are supported. Component mass and inertia properties are automatically computed. 3D contact is easily specified between complex geometry shapes. You can also import data from CSV files to create "hard points" in any coordinate system of your choice. These core capabilities may be used to quickly assemble a system and perform your analysis of choice.