

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

### Product Highlights

- Intuitive, solver neutral environment for multi-body systems modeling
- Hierarchical modeling
- Built-in parametric modeling for efficient studies of model variations
- User extensible GUI and data model to support product customization
- Automated assembly for complex systems

### Benefits

#### Accelerate Product Innovation

With MotionView you can build parametric models, easily assess alternative designs and choose the best design to meet your 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 many different contexts.

#### Improve Product Quality

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

#### Enforce Corporate Quality Standards

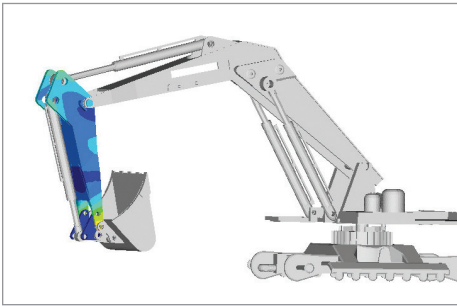
MotionView can capture your company's know-how as repeatable processes to ensure usage consistency. You can customize the user interface to meet your needs, use automation capabilities to eliminate repetitive procedural tasks and standardize and share models, data and results with others in your organization.

#### The Modeling Environment

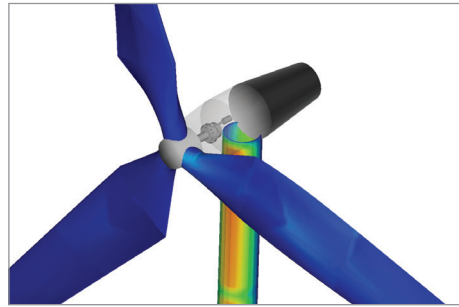
MotionView contains many capabilities designed to simplify the creation of complex mechanical models.

- Easy import of CAD geometry to create the system model; all popular formats are supported
- Import neutral geometry formats such as Parasolid, STEP or IGES
- A hierarchical modeling language to easily build complex models
- Parametrics to facilitate downstream DOE, optimization and design studies

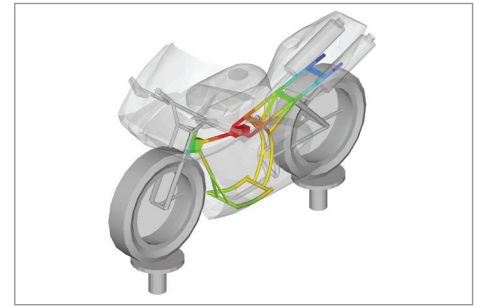
Learn more:  
[altairhyperworks.com/motionview](http://altairhyperworks.com/motionview)



Excavator arm flexbody simulation



Wind turbine flex-body simulation



Motorcycle ride analysis

- Built-in support for symmetry planes to minimize input
- Conditional logic to enable multiple topology configurations within a single system model
- 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
- Comprehensive modeling support for MotionSolve and Adams

#### Intuitive User Interface

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

- Built-in workflows simplify and standardize mechanical systems modeling
- A modern user interface with context menus in the graphics window allows for intuitive software usage
- A project browser with context sensitive menus, search and filtering options ensures 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 or build nonlinearly flexible systems
- 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 simplify modeling

#### 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®

#### Automotive Solutions

MotionView provides a broad set of tools for car and truck modeling. A comprehensive library of higher-level, automotive-specific modeling entities such as tires, roads, drivers, springs, bushings, bump-stops,

dampers are available 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. For more information, please refer to the automotive brochure.

#### General Machinery Solutions

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. 2D and 3D contact is easily specified between complex geometry shapes. 2D shapes can be extracted from the CAD geometry. You can also import data from CSV files to create "hard points" in any coordinate system of your choice. You can use specialized tools for modeling generalized joints that include compliance, friction, limits and stop; quickly construct belt-pulley systems, gear systems, cables, pulleys and winches. These core capabilities may be used to quickly assemble a system and perform your analysis of choice. For more information, please refer to the general machinery brochure.