

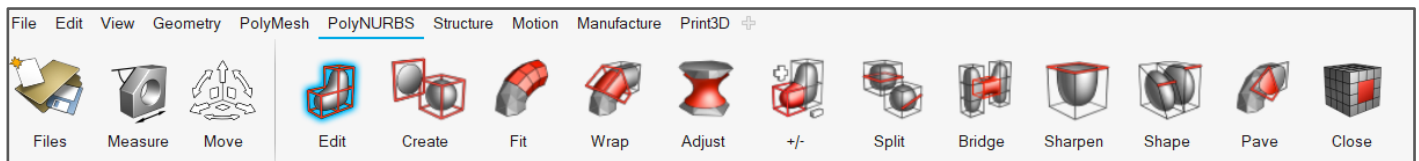
Altair Inspire 2020.1

Altair Inspire 2020.1 includes the following new features and enhancements.

New Features: Geometry and Structures

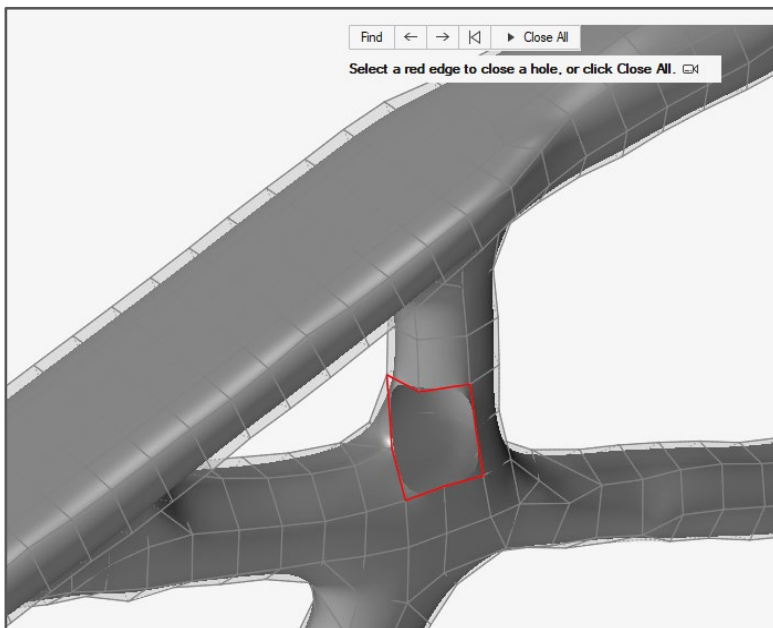
PolyNURBS Ribbon

The PolyNURBS tools have been moved to their own dedicated tab on the ribbon.



Close Hole Tool

A new Close tool has been added for PolyNURBS. Select a red edge to close a hole in a PolyNURBS cage.



Improvements to SimSolid Analysis

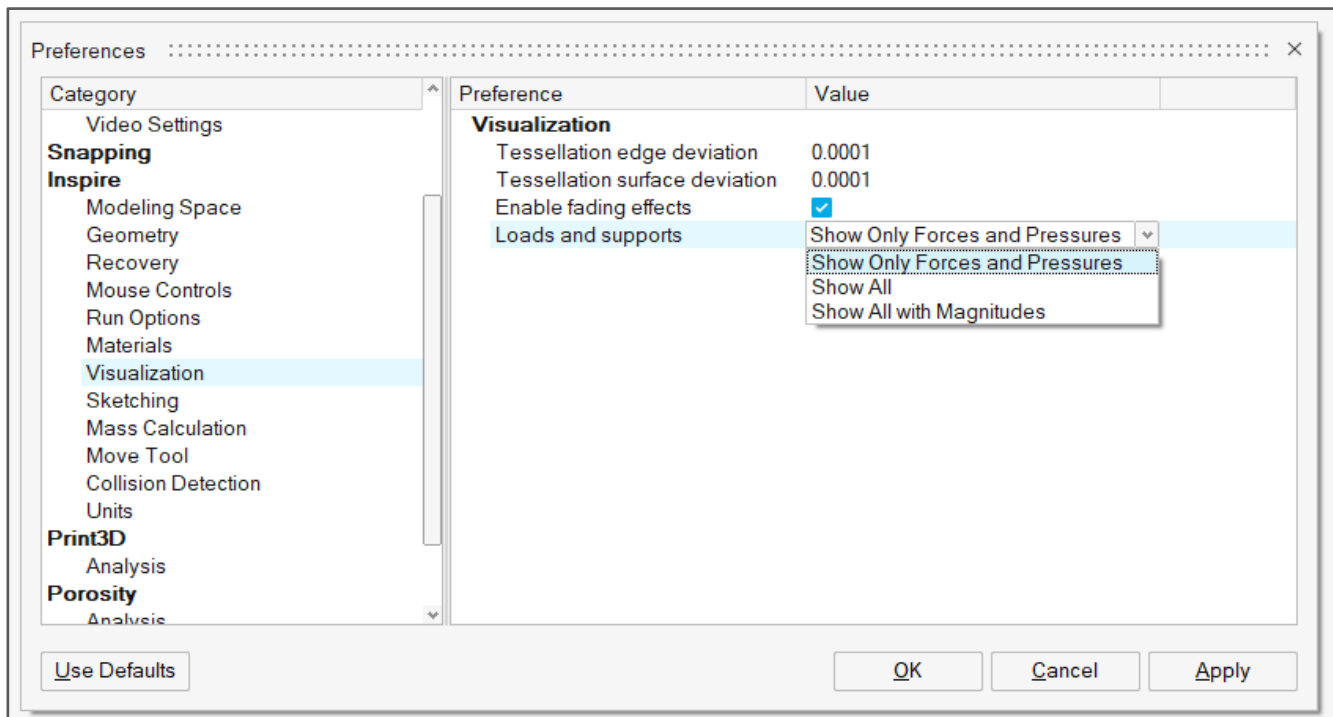
Inspire 2020.1 includes several improvements to SimSolid Analysis, including:

- Further improved merged surface handling and standalone runs.
- Support for screws.
- At runtime, SimSolid analysis results are now saved as both .stmod and .ssp files.

New Visualization Options for Loads and Supports

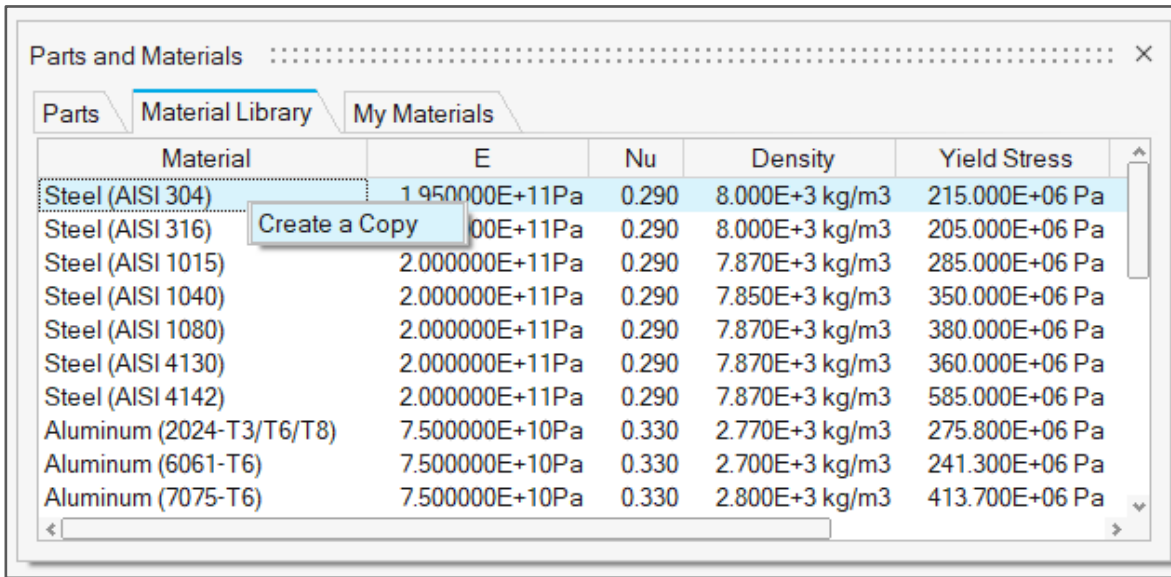
A new option has been added to the Preferences under Inspire > Visualization for loads and supports. You can now choose to:

- Show Only Forces and Pressures
- Show All
- Show All with Magnitudes



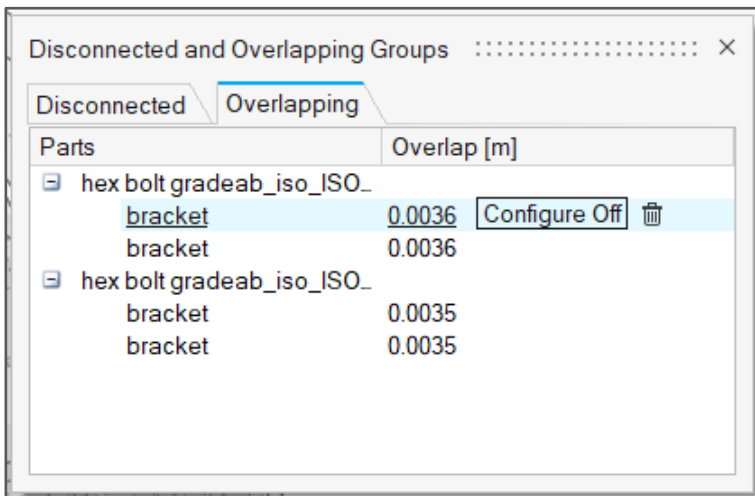
Copy and Paste Materials

You can now copy and paste standard or user-defined materials using the right-click context menu when you select a material in the Parts and Materials table. Pasted materials will appear in the My Materials tab.



Enhancements to Disconnected Groups

The Disconnected Groups table now has separate tabs for disconnected groups and overlapping parts, with options to configure off or delete parts.



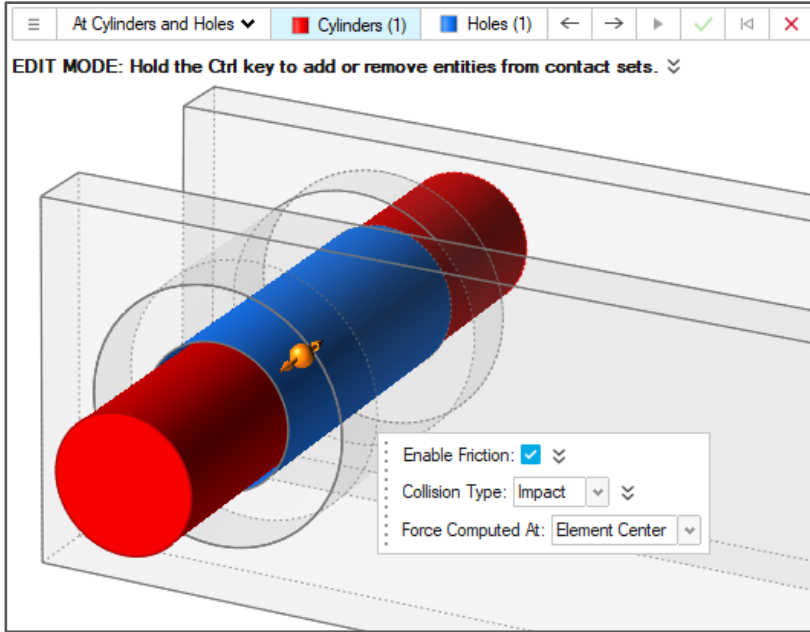
Additional Changes and Enhancements for Structures

- Contact Default Parameters:** The default values for Gap Tolerance and Penetration Tolerance have been updated to align with SimSolid.

New Features: Motion

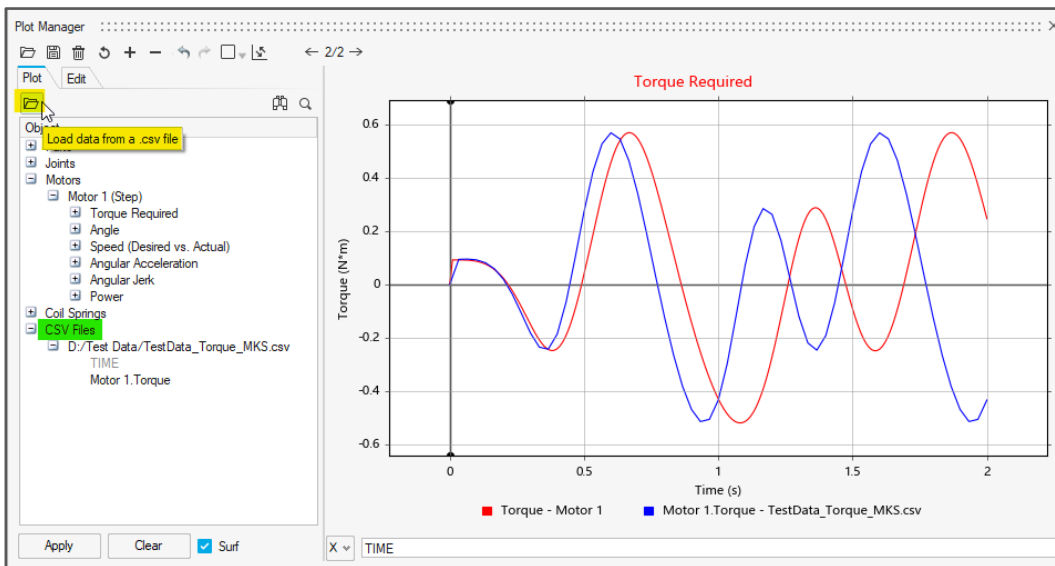
Analytical Contact for Cylinder in Hole

The motion contacts guide bar has a new option, **At Cylinders and Holes**, for modeling solid cylinders inside circular holes with an analytical solution rather than a mesh-based solution. Using geometric primitives like this can improve the efficiency of the solution.



Plotting CSV Data for Motion

The Plot Manager now allows you to load data from a .csv file that you can then plot alongside your motion analysis results. This is useful for comparing results to test data or to overlay results from a different model or analysis. To use this feature, click the folder icon underneath the Plot tab to load your data, and then plot the data channels from the **CSV Files** container in the plot browser tree.

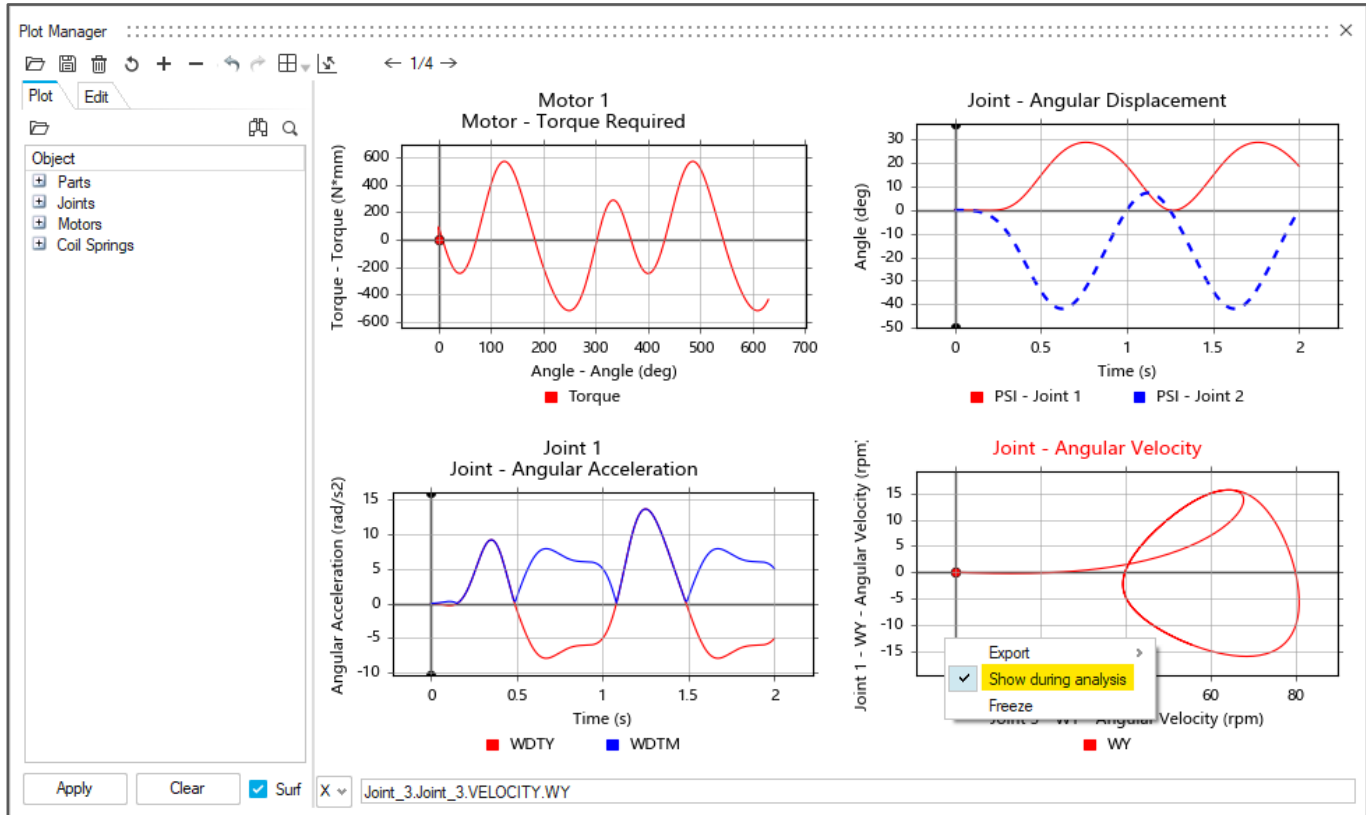


Live Plots for Motion

Plots of motion results now update live while solving, and will appear when you click on entities in the Model Browser or if an entity is selected in the graphics window.

If you create or author a plot using the Plot Manager, you can use the **Show during analysis** option to show it live during the motion analysis. This also works for cross plots where the x-axis is not Time.

The live plot will remain displayed between runs until you manually close the plot.

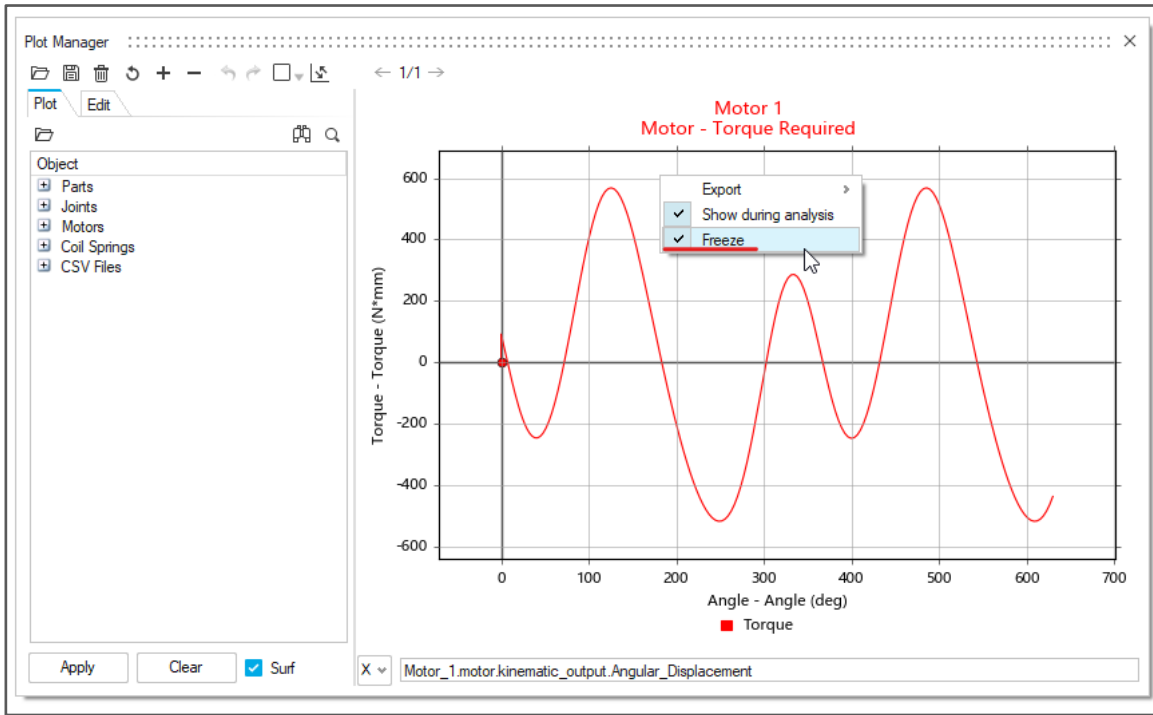


Freeze for Overlay Plotting of Motion Results

You can now freeze a plot to allow results comparisons between different runs using right-click context menu in the Plot Manager.

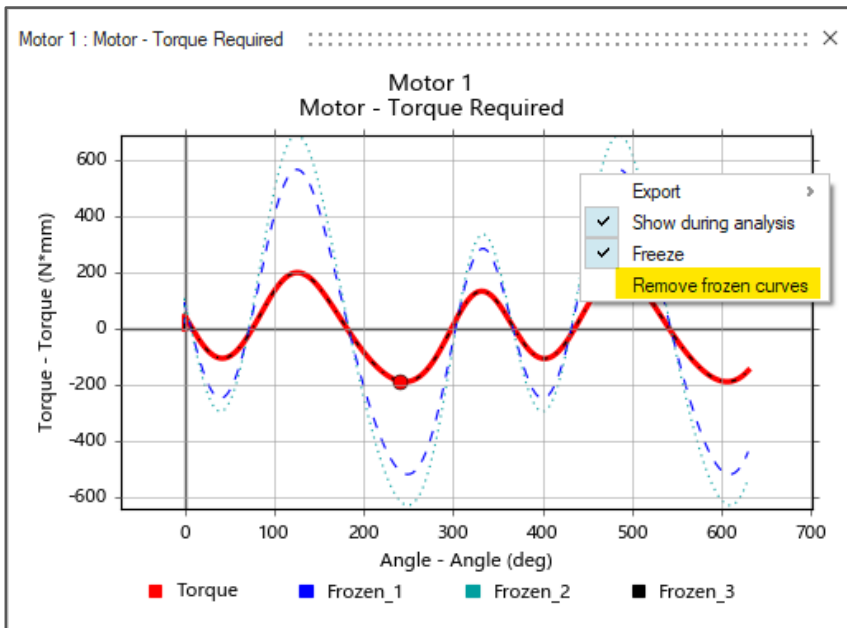
Enabling the **Freeze** option on an authored plot specifies that after the next run, a copy of the newly plotted curve will be automatically generated at the end of the motion analysis. This frozen copy of the curve will persist on the plot during each subsequent analysis, allowing you to compare motion runs.

This feature works best when used in combination with the **Show during analysis** option, which creates a persistent live plot. It allows you to compare changes against frozen curves from prior runs without needing to invoke the Plot Manager after each motion analysis.



The Freeze option is available when authoring plots in the Plot Manager.

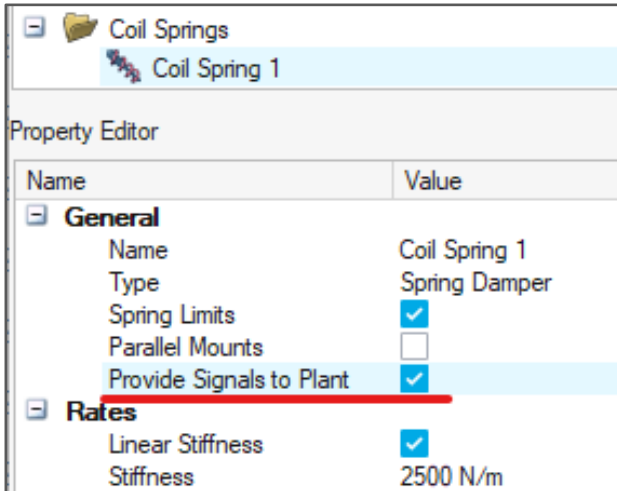
The **Remove frozen curves** option is a convenient way of deleting all of the frozen curves at once, and is available from the context menu on a live plot when reviewing motion results.



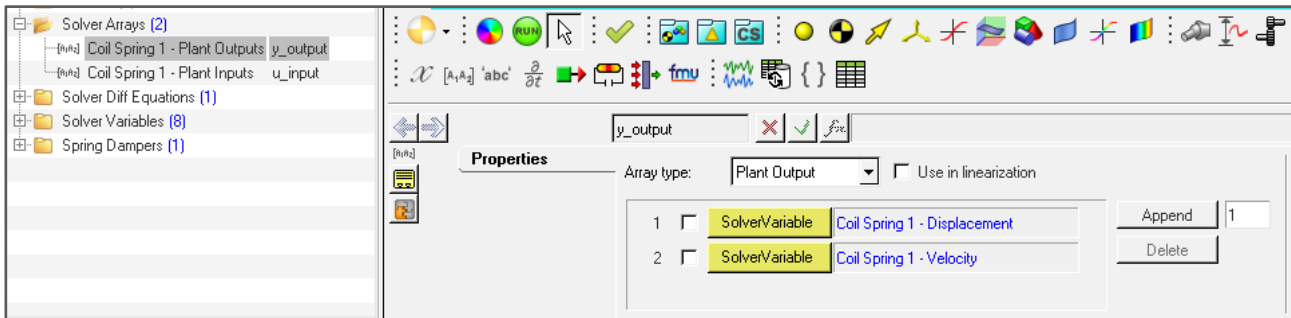
Example of a live plot showing frozen curves.

Export MDL with Plant Input/Output Signals for Spring Damper

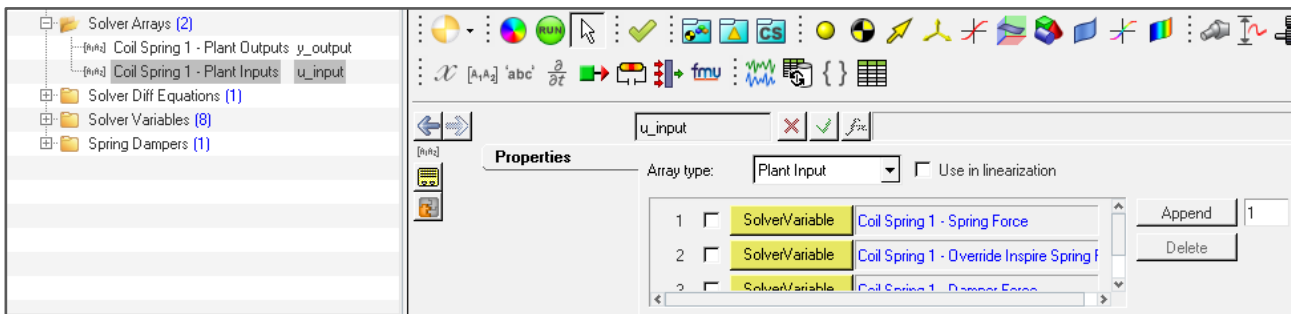
The **Provide Signals to Plant** option is now available for spring dampers in motion, but is disabled by default. It can be found in the Property Editor and when enabled, the motion **Export** operation will include the necessary plant signals in the .mdl file for use in MotionView, MotionSolve, and Altair Activate.



Provide Signals to Plant option enabled in the Property Editor.



Plant Output signals as shown in MotionView.



Plant Input signals as shown in MotionView.

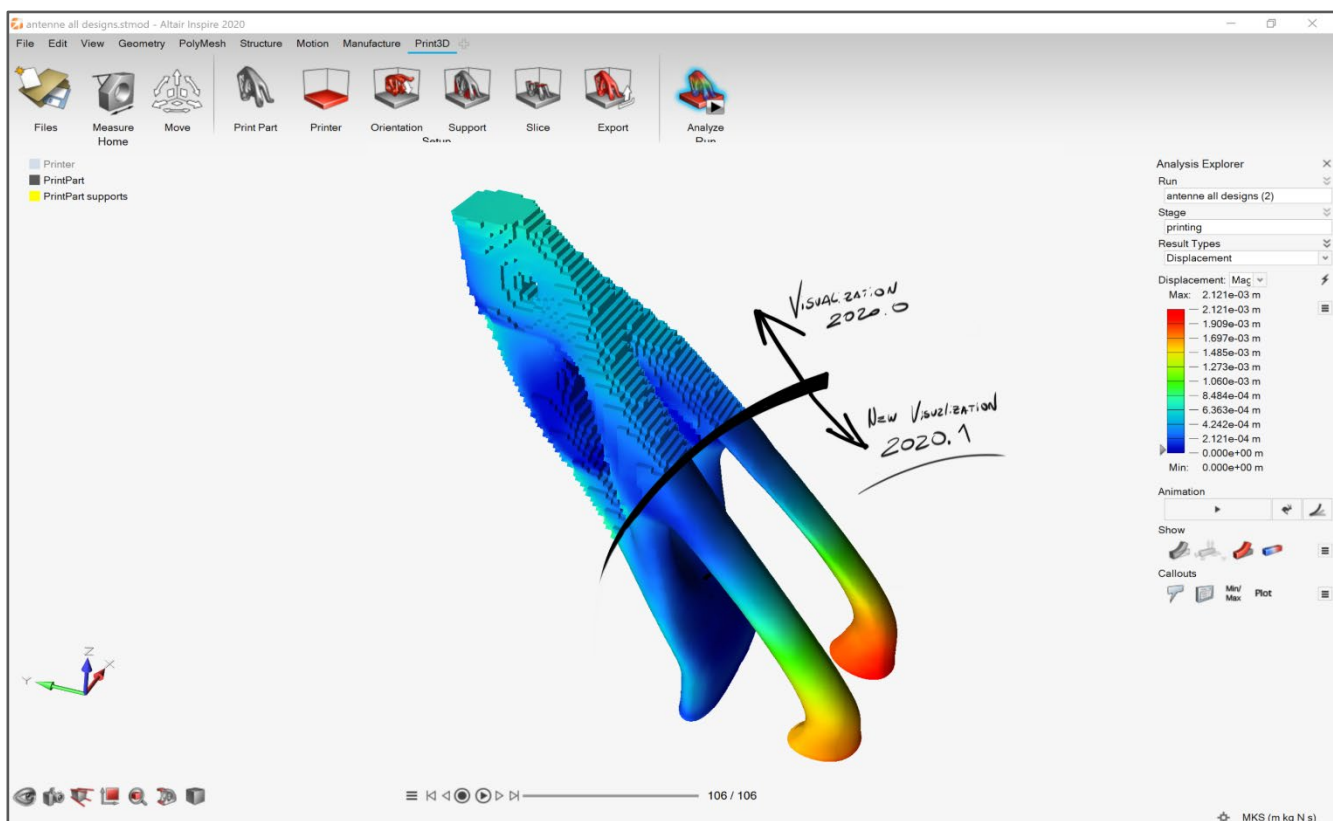
Additional Changes and Enhancements for Motion

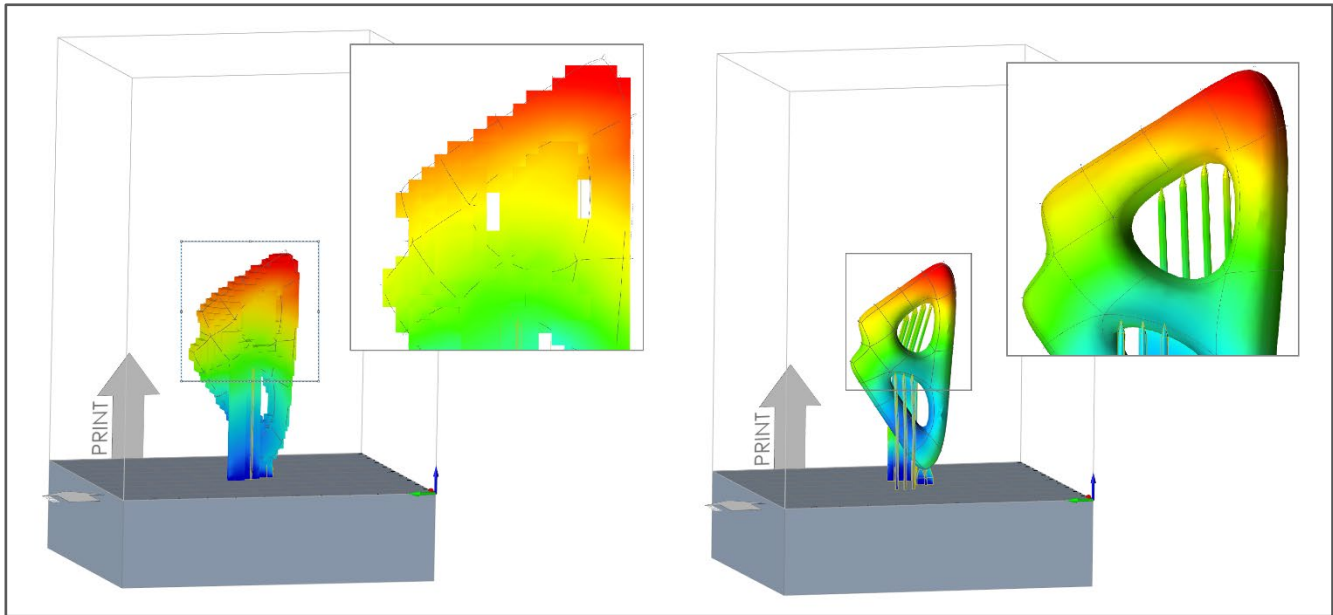
- **Updates to Tour Mode for Joints:** The tour mode has been revised slightly to improve the workflow for joint creation. The arrows on the guide bar will jump to the next candidate in create mode. Hold the **Ctrl** key to tour joints that have been created while in editing mode. Note that you must select a joint first before using the **Ctrl** key.
- **New File Extension:** For 2020.1 the file extension for MotionSolve output files has been changed to .py instead of .mspy.
- **Improved Guide Bars:** The guide bars have been made more consistent with new buttons for Create, Create and Exit, Reset, and Exit.

New Features: Print3D

Improved Visualization of Analysis Results

Inspire Print3D now maps the results of the print analysis back onto the original geometry using a finite element mesh. This greatly enhances the appearance and will result in more accurate and detailed results.



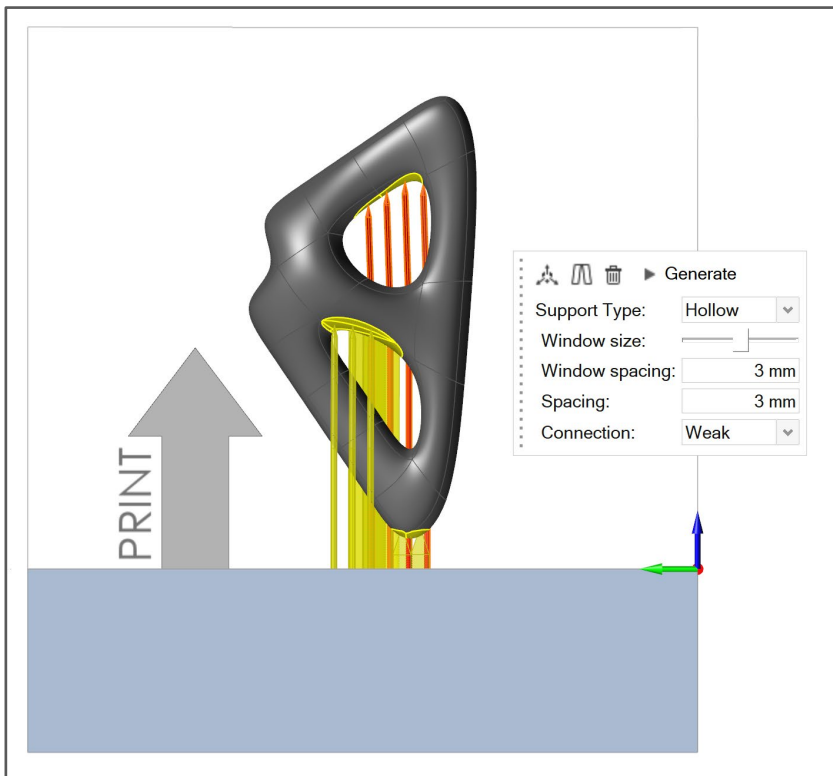


Results in Inspire Print3D 2020

Results in Inspire Print3D 2020.1

Improved Supports Microdialog

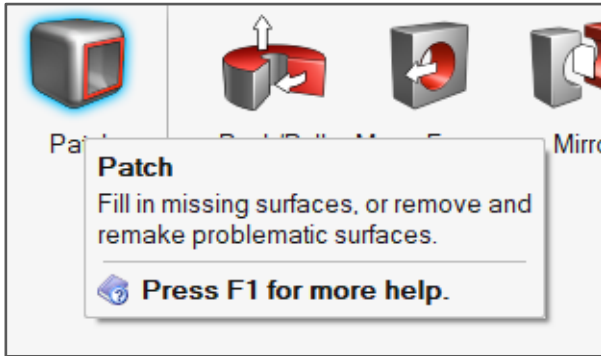
The Support tool microdialog now allows you to configure all of the different options before generating supports.



New Features: General

Enhanced Tooltips

The ribbon icons now feature enhanced tooltips. Simply hover over a tool on the ribbon to learn more about the tool. Additional information is available by pressing F1.



Improvements to Persistent Measures

Several enhancements have been added to persistent measures, including:

- Endpoints for persistent measures can now be moved and edited
- Persistent measures can now be suppressed
- You can snap to persistent measures
- Part replacement now supports persistent measures

Additional Changes and Enhancements for Inspire

- **Push/Pull Section Cuts:** When using the Section Cuts tool, you can now click-and-drag the green section profiles, similar to the Push/Pull tool.
- **Automatic Numbering of Renamed Parts:** You can now use %n% to rename multiple parts the same name with a number appended. For example, if you rename several parts to Body_%n% the result will be Body_1, Body_2 etc. This works not only for parts but for other entities as well, but only when using the Rename option in the Model Browser context menu.
- **Isolate Load Case:** You can now isolate a load case from the Model Browser by selecting Isolate Loads and Parts from the context menu.
- **Additional Standard Views:** New options for the Front View, including XY and -XY, have been added to the Preferences under Modeling Space.
- **CADmeister Mouse Presets:** CADmeister has been added to the presets for mouse controls in the Preferences.

Resolved and Known Issues

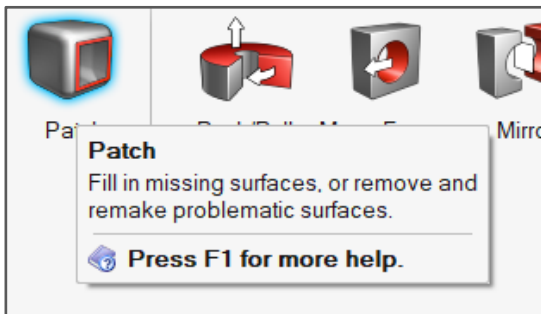
Resolved and known issues listed in the online help. To view the latest information, go to **File > Help > What's New**.

Learn More About Inspire

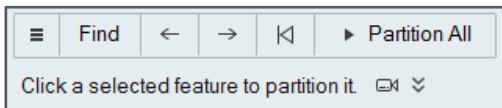
You can learn more about new and existing features in Inspire using the following resources:

In-Application User Assistance

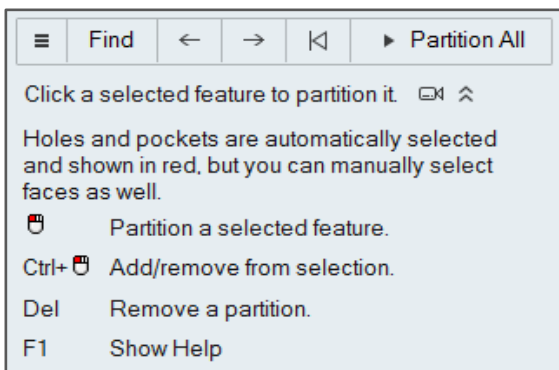
Inspire provides two types of user assistance. **Enhanced tooltips** appear when you hover over icons and other features. They describe what the tool does.



Workflow help appears when you select a tool that opens a guide bar or microdialog. The text prompts you what to do next.

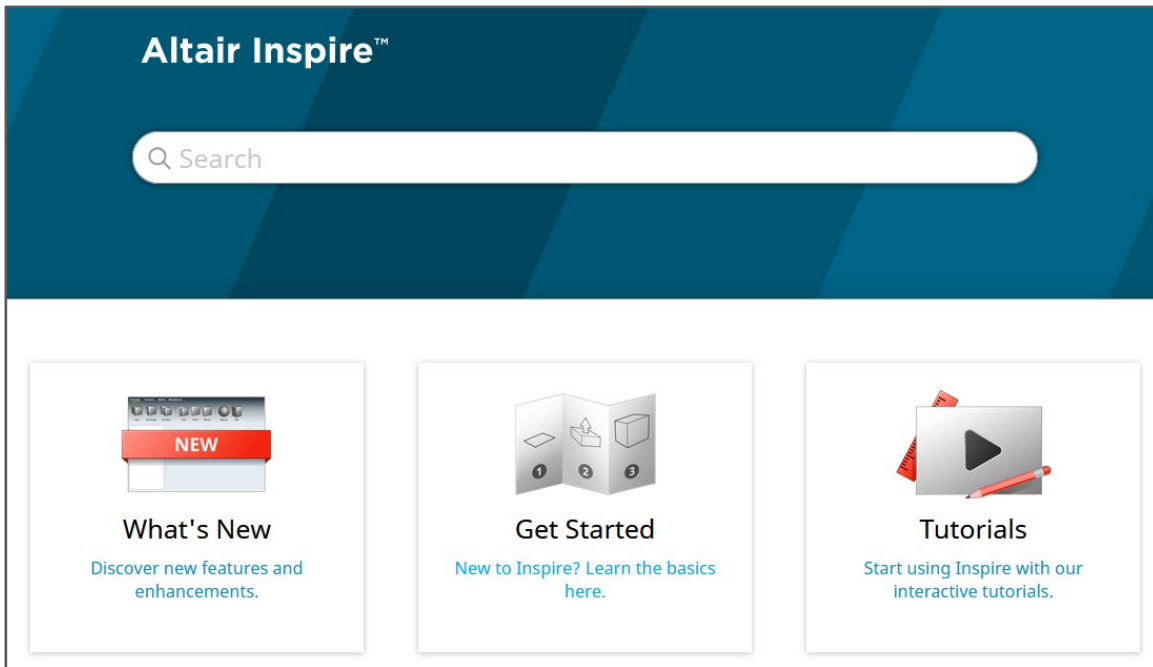


Click  to view additional tips and shortcuts. Some tools also include a video .



Online and Offline Help

Press **F1** or select **File > Help > Help** to view the online help.



You can download an offline version by selecting **File > Help > Download Offline Help**. An internet connection is required to download.

