Femtet Ver.2026.0　What's New

This document lists the new features added in Femtet2025.1 (only Japanese Version has been released) and Femtet2026.0 in order.

Femtet2026.0 English Version adds all these new features to Femtet2025.0 English Version.

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Femtet Ver.2025.1　What's New



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UI	• Modifying ribbon menu and adding customize function
Macro	• Adding modeling related Macros

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Solver - Fluid Analysis : Adding Analysis Considering Rotation (MRF)

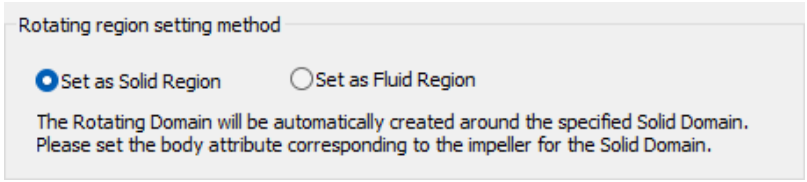
Analysis considering rotation (MRF) has been added, enabling fluid analysis around impellers.

■What Is MRF Analysis?

This feature analyzes the flow around impellers, such as those in fans and stirred tanks, without moving the mesh.
It is used to visualize steady-state flow.

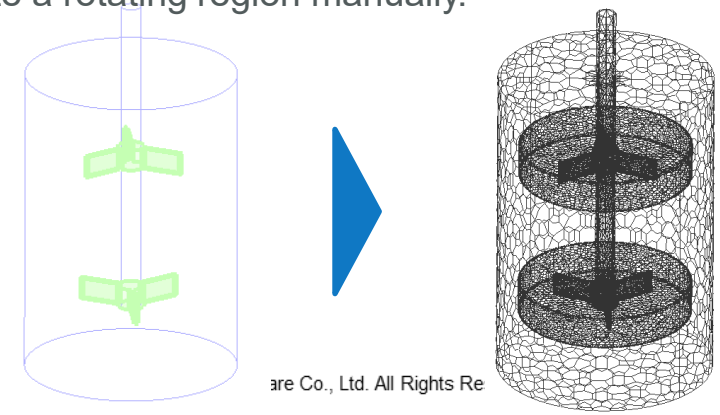
■Rotating region setting

MRF analysis requires a rotating region to be defined in the fluid domain.

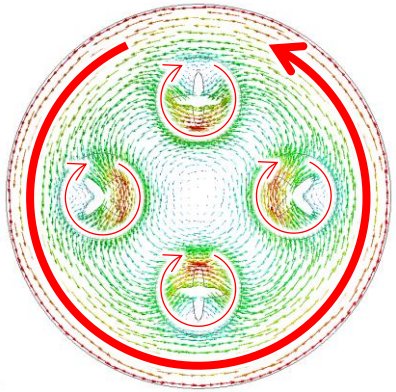


[Set as Solid Region
Selecting the impeller body attribute automatically creates a rotating region.

[Set as Fluid Region
Create a rotating region manually.



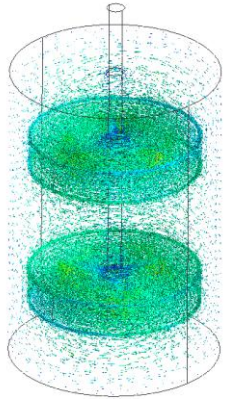
■Example 25



Flows involving both rotation and revolution are also supported.

■Example 26

Flow analysis of a stirred tank (no baffles)



Flows involving multiple impellers are also supported.

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Solver - Piezoelectric-Acoustic Coupling Analysis : Improvement of Fully-Coupled Analysis

Initial stress import is now supported in strongly coupled piezoelectric-acoustic analysis.

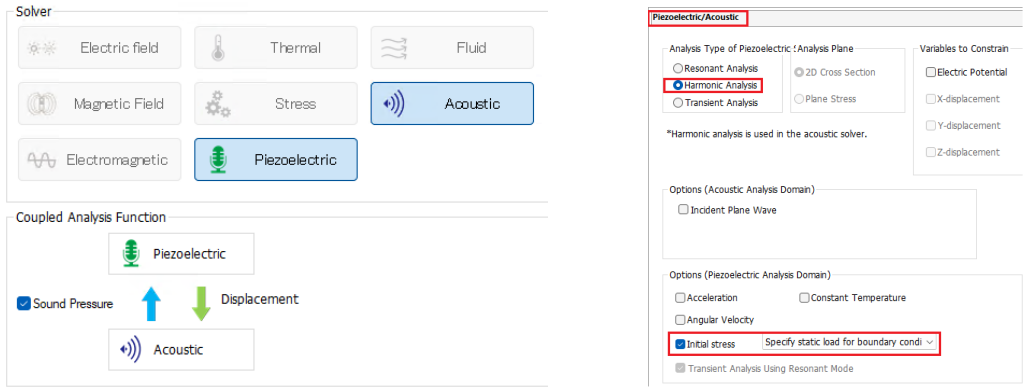

Figure 1. Analysis Conditions: [Solver Selection] - [Piezoelectric/Acoustic Analysis]

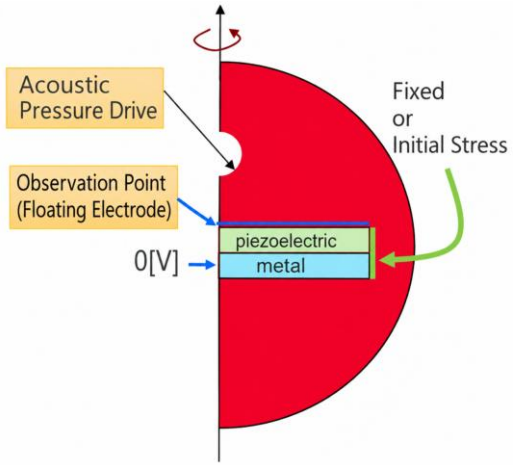

Figure 2. Overview of the Analysis Model
Initial stress is calculated using a separate static analysis model, and the analysis results are imported into this model.

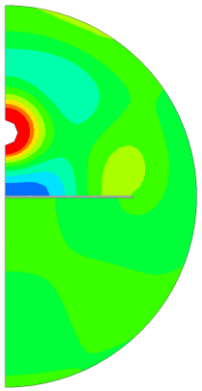

Figure 3. Sound Pressure Distribution 34kHz

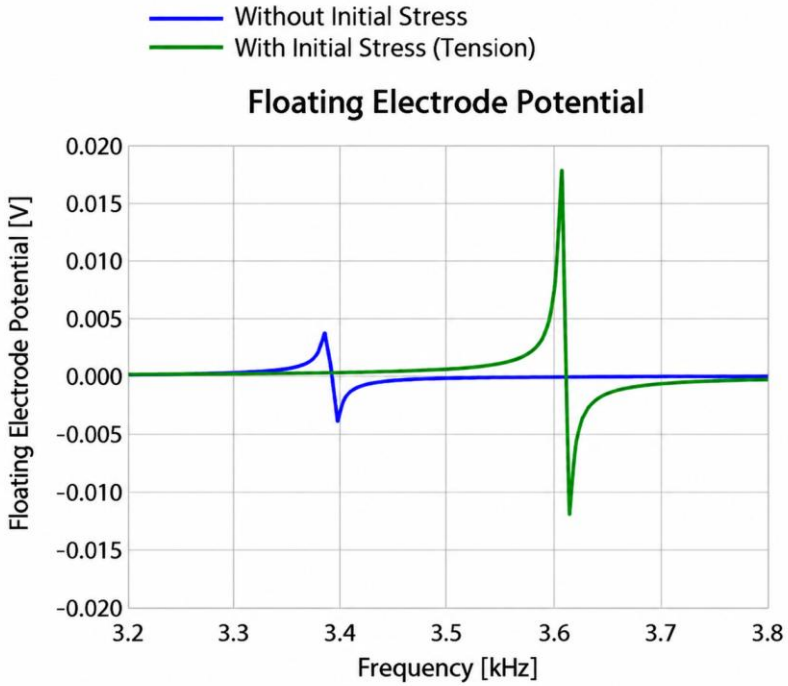

Figure 4. Applying initial tensile stress shifts the resonant frequency to a higher value.

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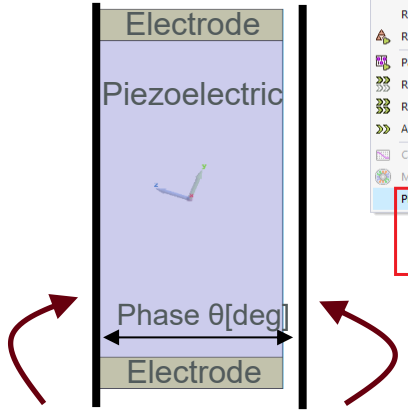
Solver - Piezoelectric Analysis : Piezoelectric Dispersion Curve Analysis

Dispersion curve analysis and plotting using periodic boundary conditions have been added.



Periodic boundary conditions pair

Figure 1.
Piezoelectric model

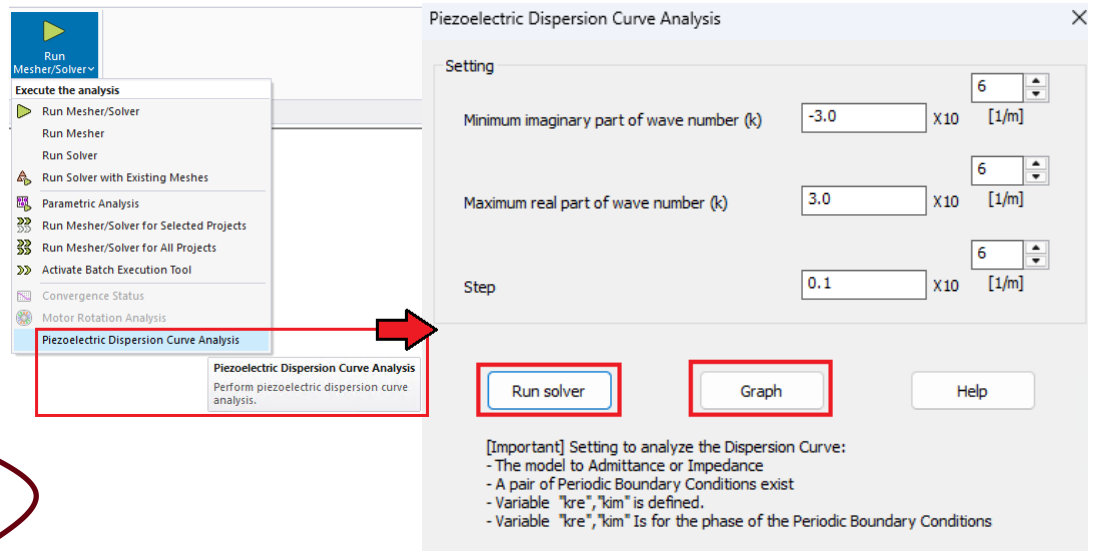


Figure 2.
Dispersion Curve Analysis

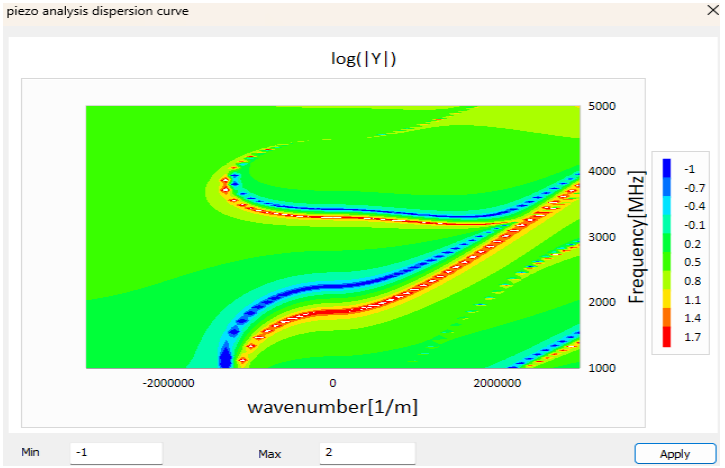


Figure 3. Dispersion Curve

- The analysis is performed by converting the wavenumber into an angle.
  Therefore, spurious modes may appear.
- For details, refer to Femtet Help [Piezoelectric Example 30: Dispersion Curve].

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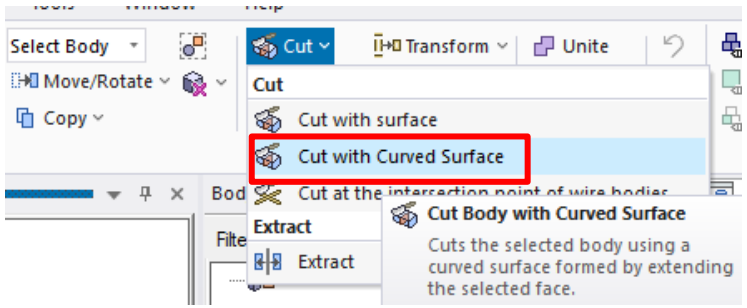
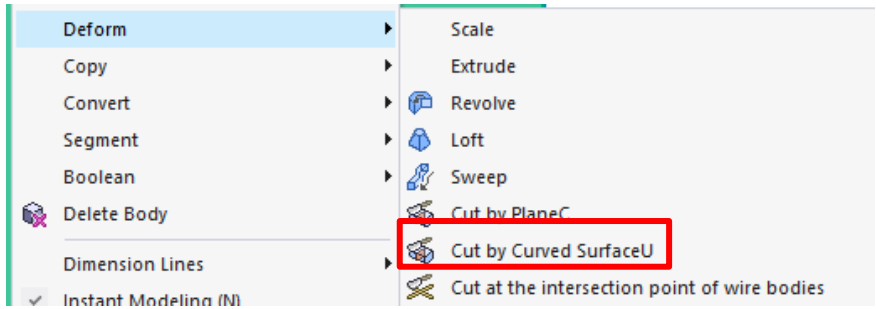
Model - Adding function of Cut Body with Curved surface

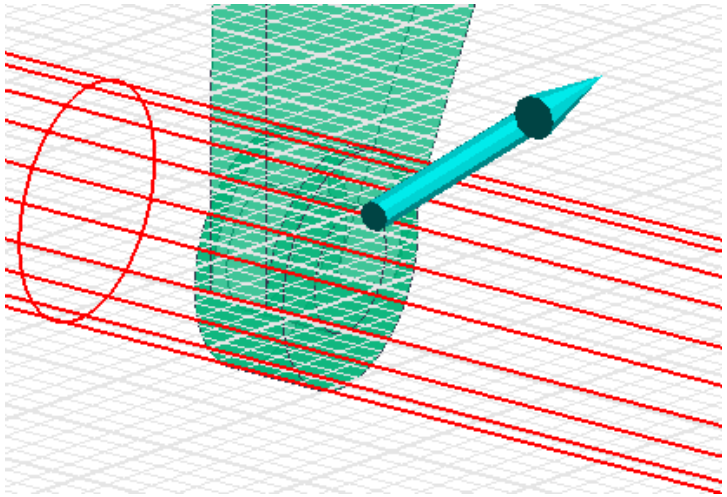
A feature for cutting a body using a selected curved surface has been added.



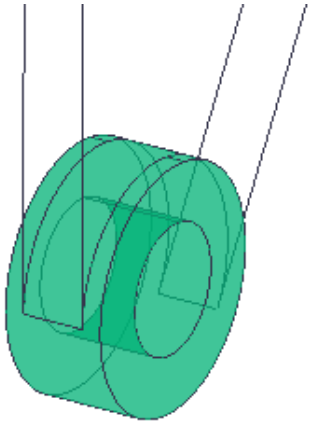
Ribbon menu
[Model] - [Cut] - [Cut with Curved Surface]



Right-Click menu
[Deform] - [Cut by curved surface]



Example of cutting a body using the curved surface (cylindrical surface) indicated by the red lines



The cut geometry is separated into a separate body.

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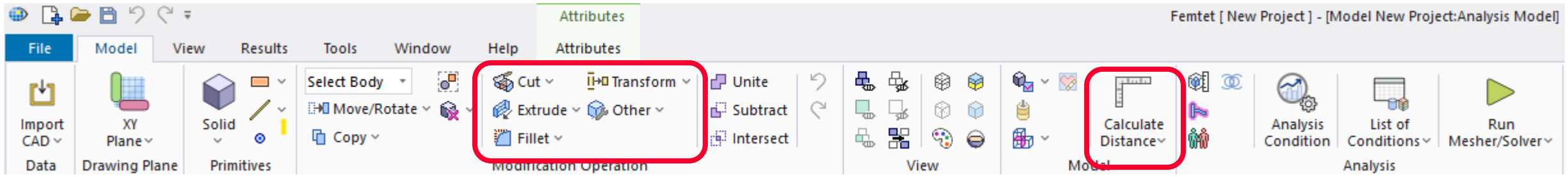
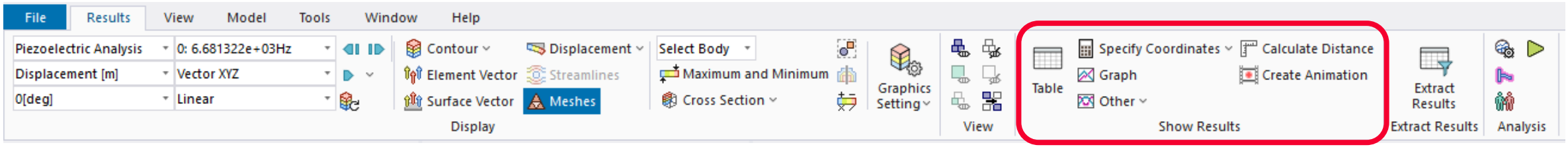
UI - Modifying ribbon menu and adding customize function

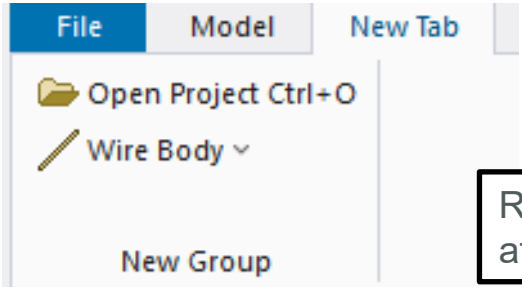
- Text labels have been added to the icon menu, and the icon size has been changed.
- A ribbon customize function has been added.







Right-Click
On the ribbon menu



Ribbon menu
after customization

- Icons and text labels make functions easier to identify intuitively, improving ease of operation.
- A customized ribbon tailored to the workflow enables more efficient operation.

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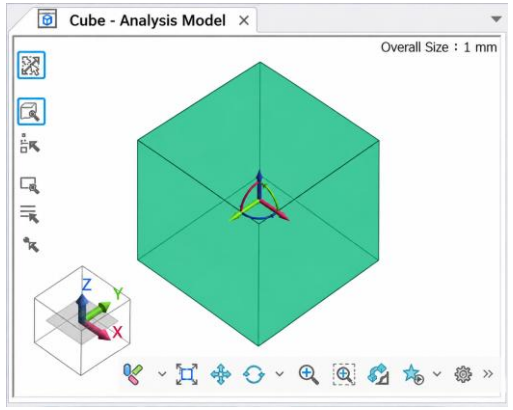
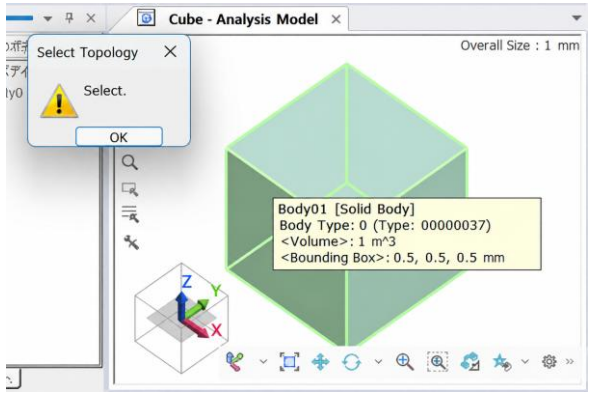
Selection and user-selection functions have been added to the CGaudi class.



Result of executing SelectBodies(BodyList)
Selects a CGaudiBody created in a macro.



Result of executing PromptUserToSelectBodies
Displays a dialog box that allows bodies to be selected.

Selection-Related

SelectBodies, SelectTopologies

- Select specified bodies and topologies

PromptUserToSelectBodies, PromptUserToSelectTopologies

- Display a dialog box in Femtet, wait for bodies or topologies to be selected, and retrieve the selection.

ClearSelection

- Clear the current selection in Femtet

These functions provide greater flexibility in designing macro-based integration of Femtet into business workflows.

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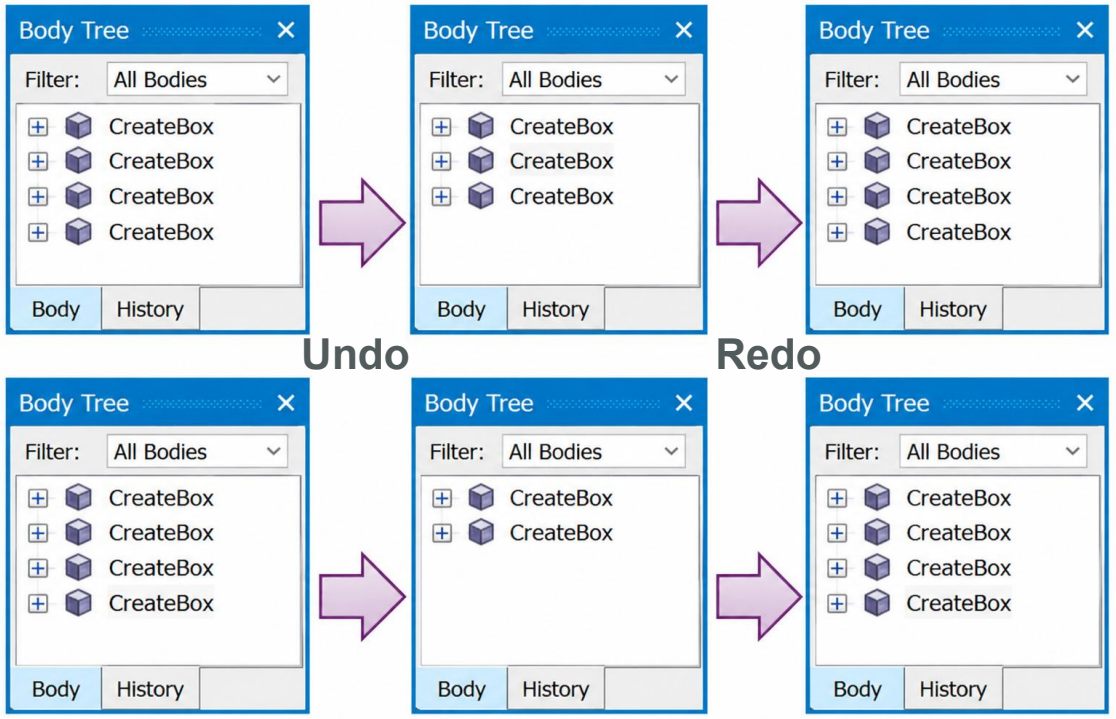
Undo, Redo, and history mark functions have been added to the CGaudi class.



Model History related

Undo, Redo

- Undo/Redo one step in the model history

GetCurrentHistoryMark, MoveToHistoryMark

- Get a mark indicating the current position in the history.
- Move to the history position indicated by the specified mark and restore the state at that point.

- What Is a History Mark?

A history mark serves as a marker indicating a specific state in the model history, allowing that state to be restored directly later.

These functions provide greater flexibility in designing macro-based integration of Femtet.

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Femtet Ver.2026.0　What’s New



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Mesher	• Automatic Adjustment Mesh size • Make Layer Mesh generation easier by using model modifications

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Result Display	• Support VTU/JSON format for result output
Macro	• Updating Excel add-in UI and adding new feature
Important notice	• Notice related changing modeling kernel (Parasolid)

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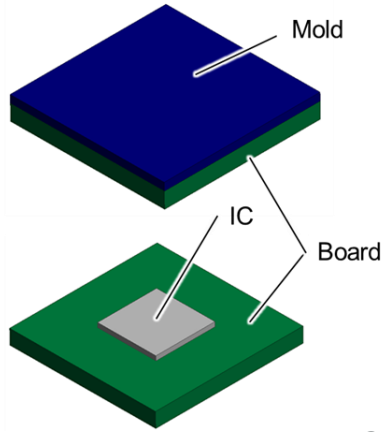
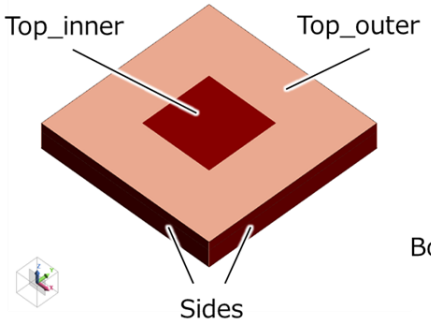
Solver - Thermal Analysis : Thermal network model (DELPHI model)

Analysis incorporating a thermal network model (DELPHI model) is supported.

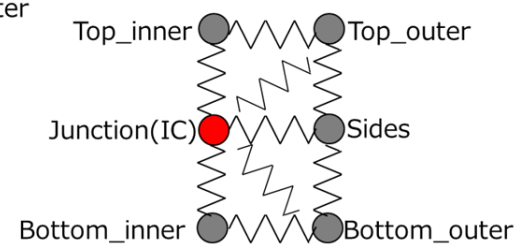
Detailed Model



DELPHI Model

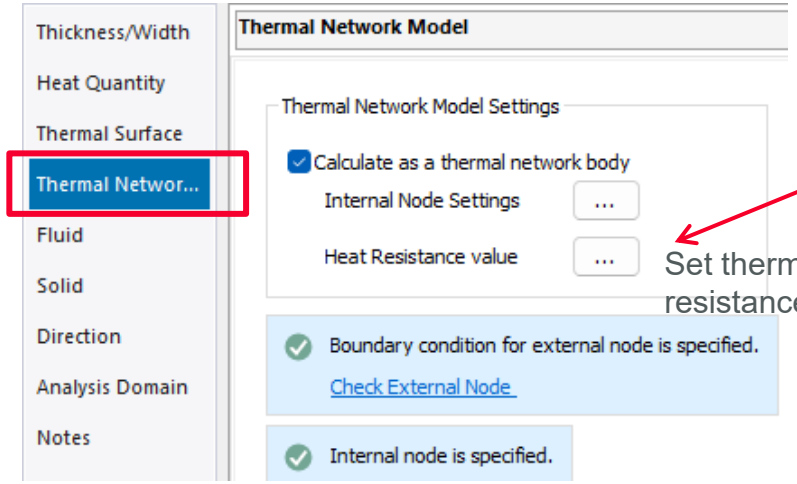


Convert a detailed model into a 1-D thermal network



Thermal network model

Boddy attribute

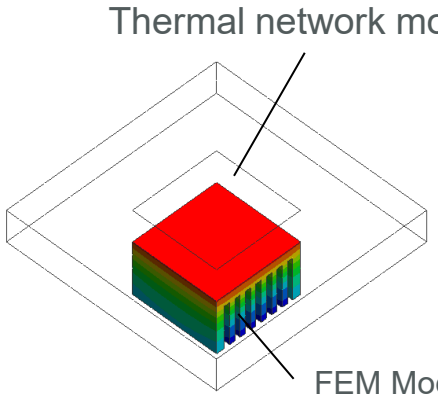


Set thermal network resistance information

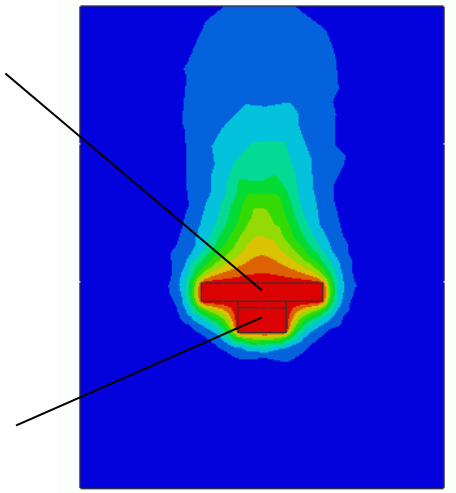
No	Start Node	End Node	Thermal Resistance [deg/W]
1	IC	Top_inner	12.883641
2	IC	Bottom_inner	145.49899
3	IC	Sides	2157479.4
4	IC	Top_outer	136.74777
5	IC	Bottom_outer	408.26392
6	Top_inner	Bottom_inner	1e+12
7	Top_inner	Sides	1e+12
8	Top_inner	Top_outer	1454.2807
9	Top_inner	Bottom_outer	1e+12
10	Bottom_inner	Sides	1e+12
11	Bottom_inner	Top_outer	4359.8607
12	Bottom_inner	Bottom_outer	974.03405
13	Sides	Top_outer	173.01467

Thermal Analysis Example 31

Heat Dissipation analysis using a thermal network model (DELPHI model)



Thermal Analysis



Thermal Fluid Analysis

	Temperature [d...	Heat Quantity [...	Heat Flow Rate [...
ThermalNetworkComponent IC	178.989	1	-
ThermalNetworkComponent Top_inner	177.758	-	-6.110e-2
ThermalNetworkComponent Top_outer	127.613	-	-2.155e-1
ThermalNetworkComponent Bottom_inner	122.278	-	-3.910e-1
ThermalNetworkComponent Bottom_outer	122.277	-	-2.042e-1
ThermalNetworkComponent Sides	110.492	-	-1.282e-1

Calculation results for thermal network nodes can be obtained from the table.

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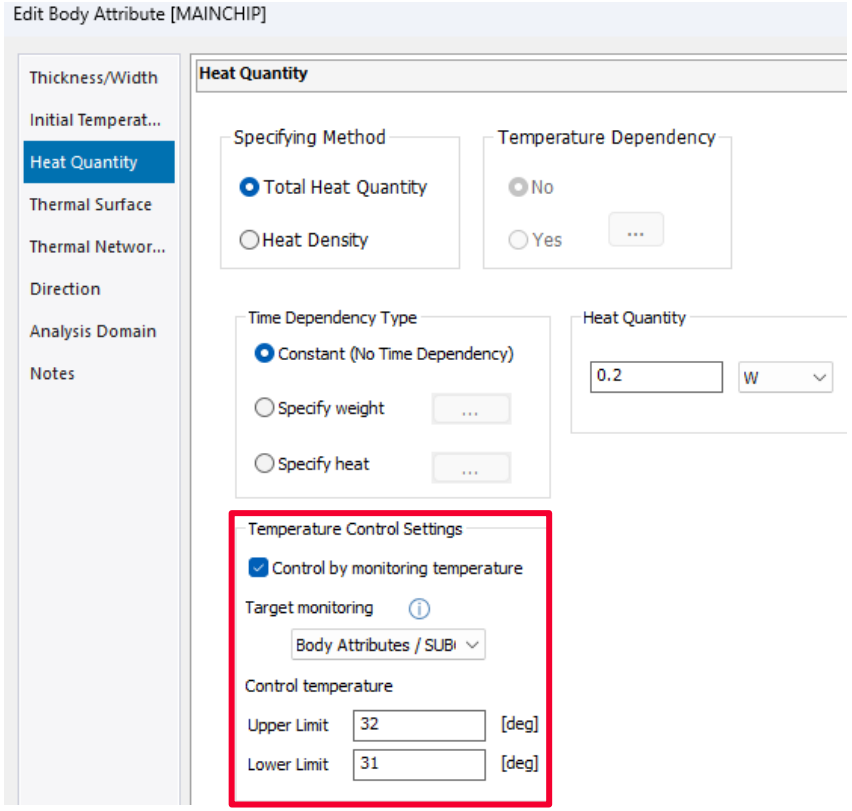
Solver - Thermal Analysis : Monitoring temperature (thermostat control)

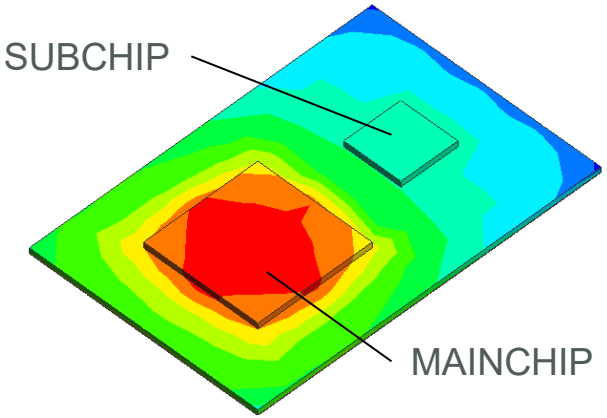
In transient analysis, heat generation can be turned on/off based on the temperature at a monitoring point.

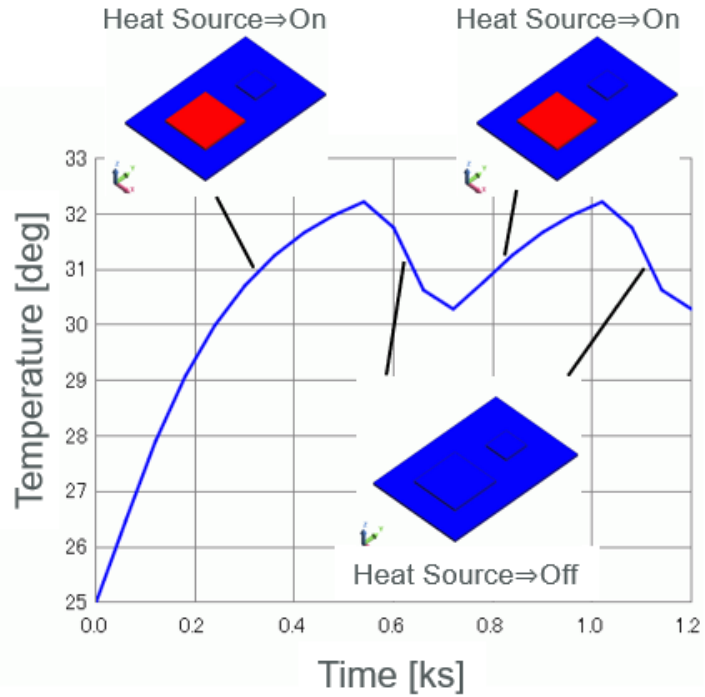


In [Body Attributes] > [Heat Quantity] tab, select [Control by monitor temperature].

Thermal Analysis Example 32

Monitor the maximum temperature of SUBCHIP and turn the heat generation of MAINCHIP on or off.





- When the maximum temperature of SUBCHIP is 32 deg C or higher
  -> Turn off the heat generation of MAINCHIP.

- When the maximum temperature of SUBCHIP is 31deg C or lower
  -> Turn on the heat generation of MAINCHIP.

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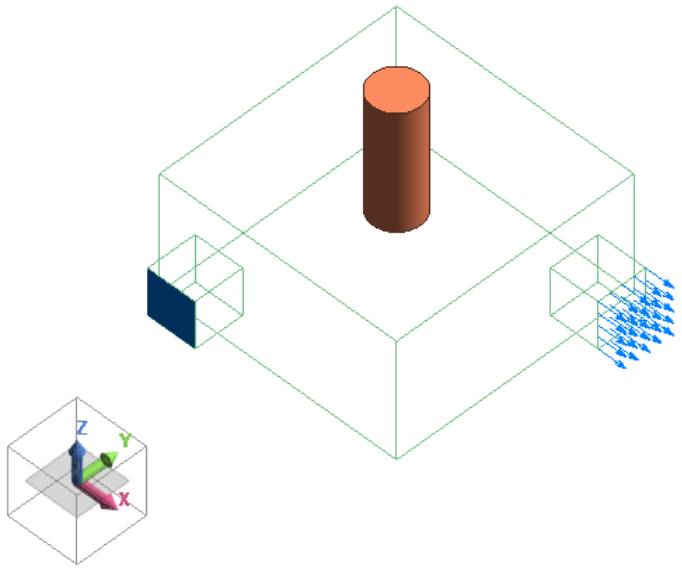
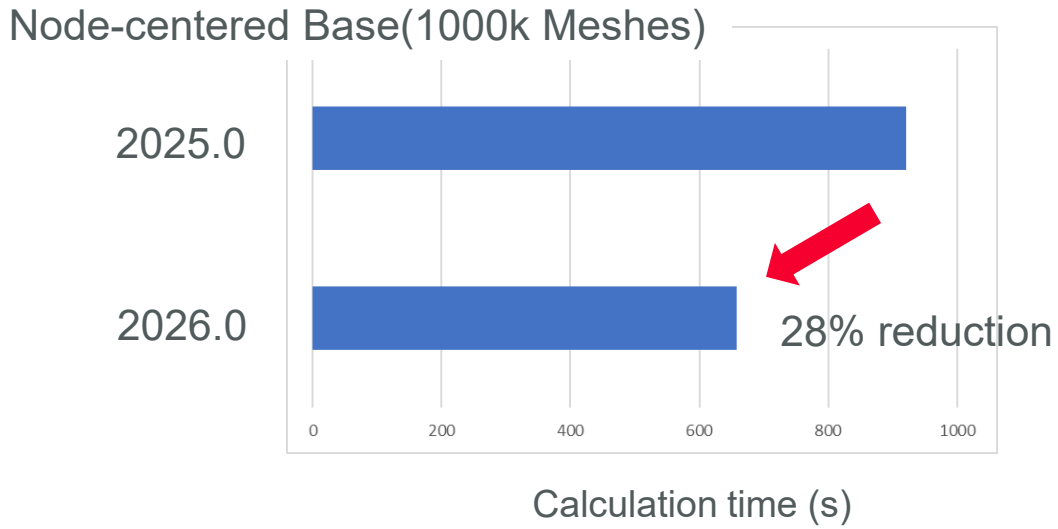
Solver -Fluid Analysis : Improved calculation speed

Fluid analysis has been accelerated by improving parallel processing efficiency.







Evaluation platform
CPU : Xeon W-3375 (38core)
* Multi-core analysis is available only with the Acceleration Option.

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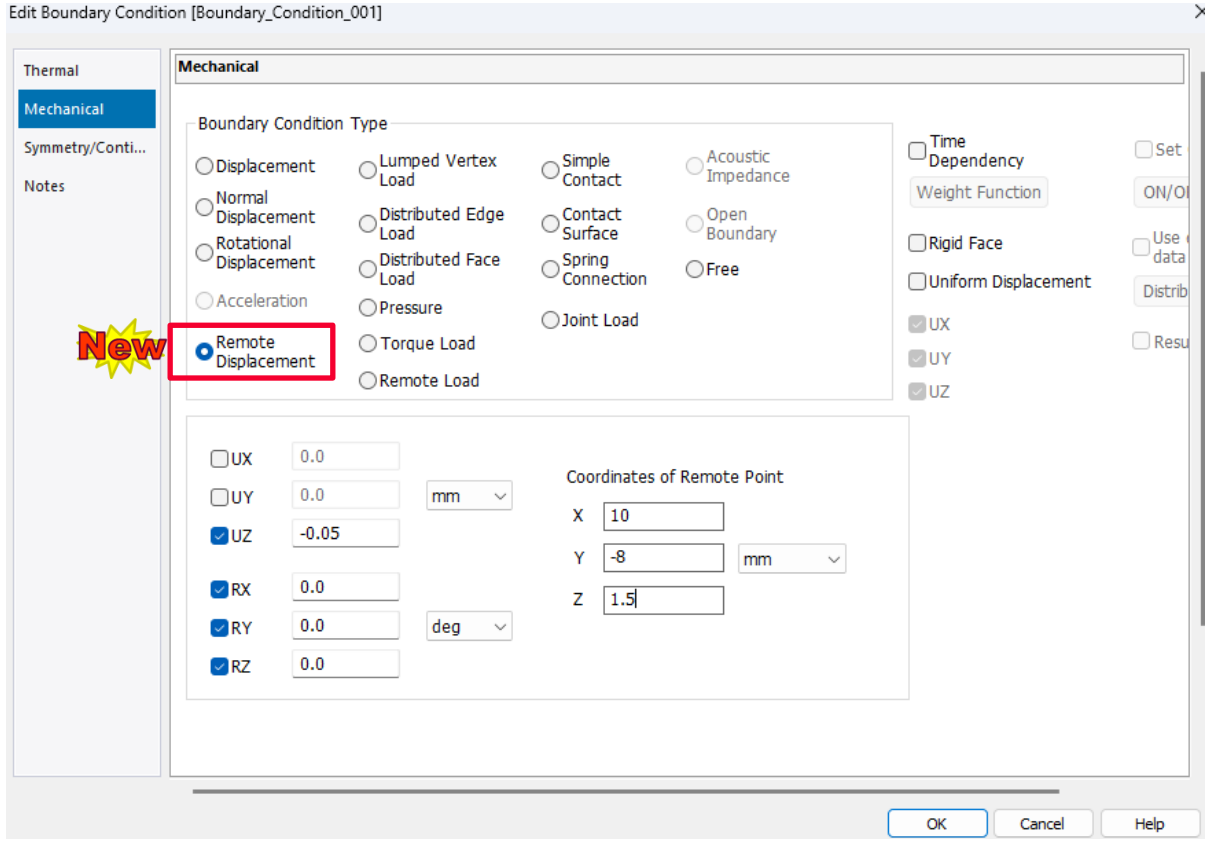
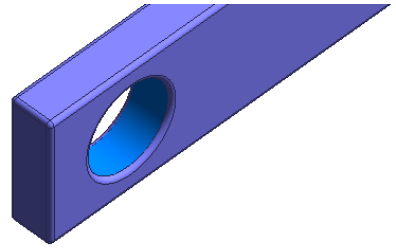
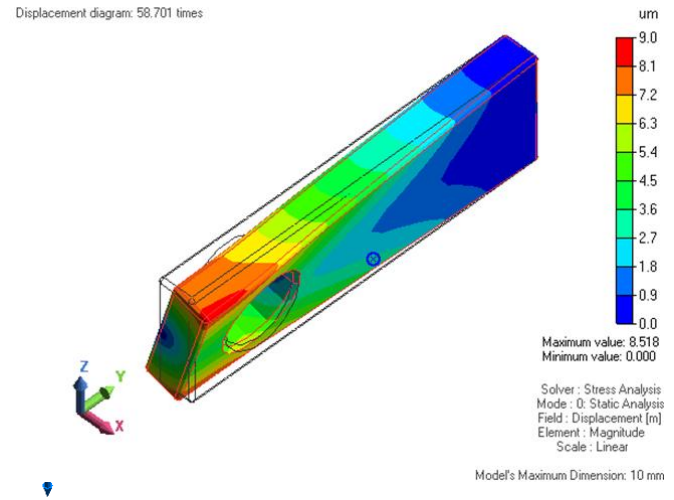
Solver - Stress Analysis : Remote displacement

Remote displacement has been added as a boundary condition.

A boundary condition that constrains a boundary surface through a virtual point enables model simplification.







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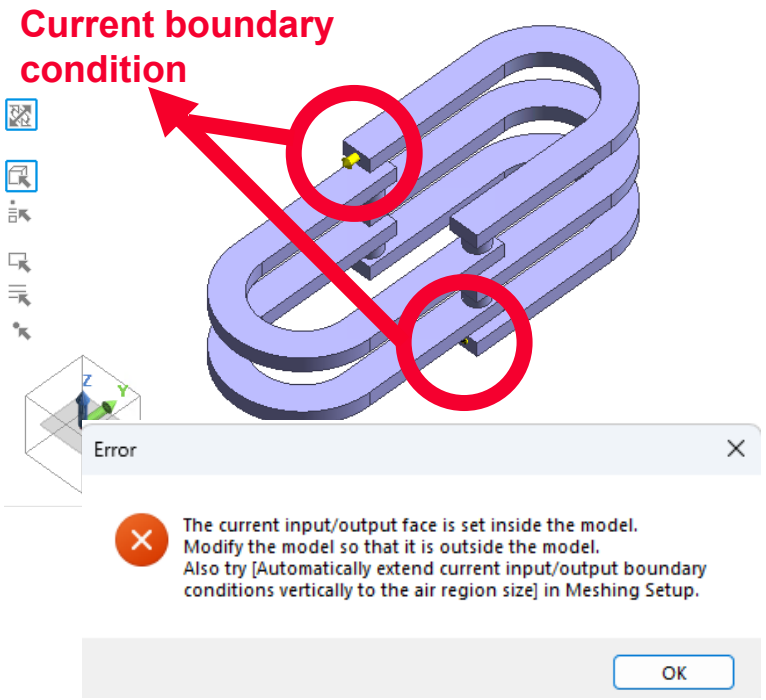
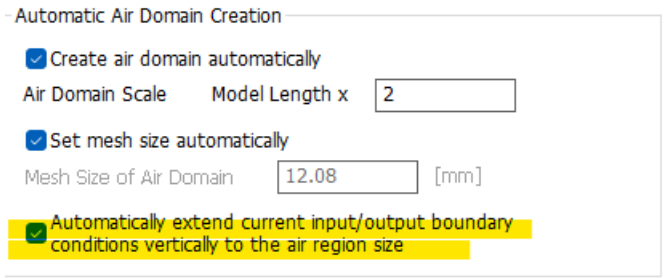
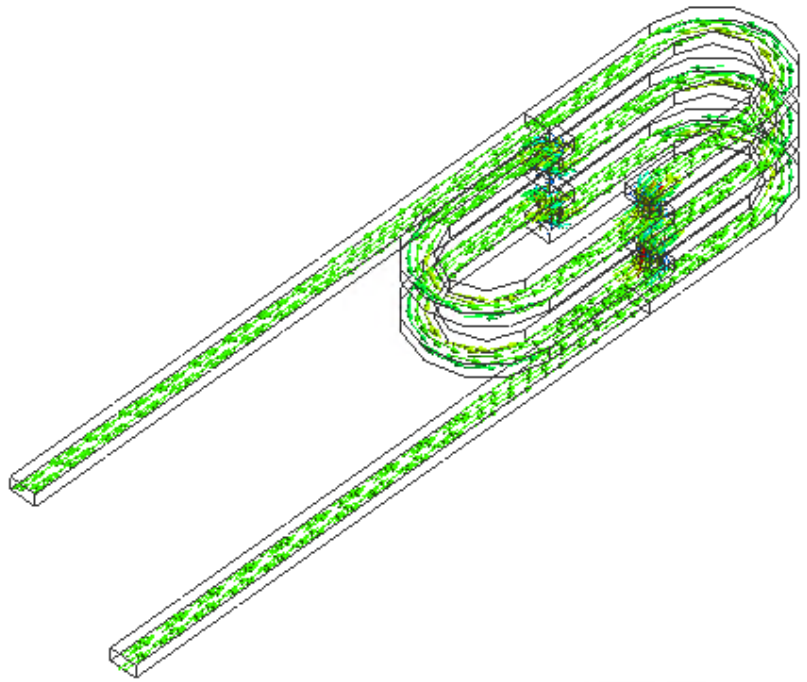
Solver - Magnetic Analysis : Automatic extension of Boundary interface

A feature has been added to automatically extend current inlet/outlet surfaces
This prevents analysis errors caused by the positions of current inlet/outlet surface







Analysis cannot be performed when current inlet/outlet surfaces are located inside the model.
*Error message has been shown since Femtet Version 2026

New feature
[Automatically extend current input/output boundary conditions vertically to the air region size]

When this option is enabled, the current input/output surfaces are automatically extended before calculation.

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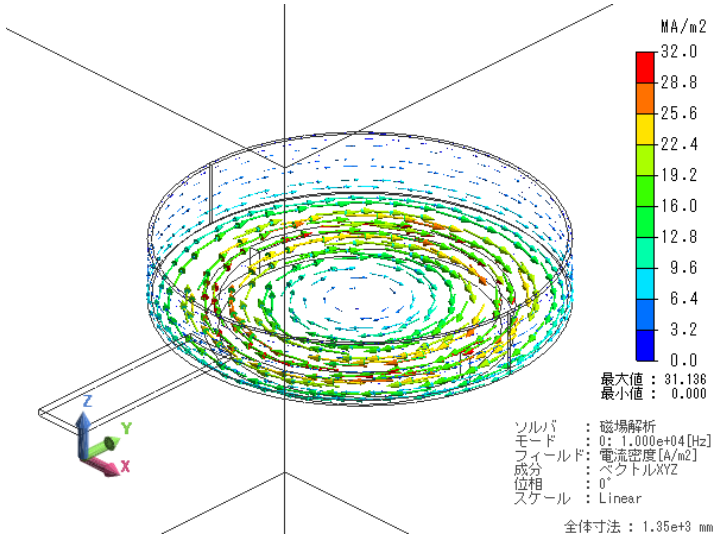
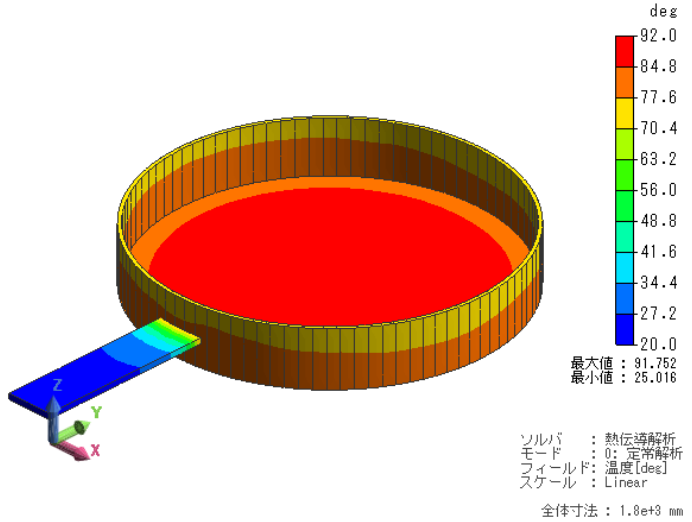
New function of Magnetic Thermal Fluid coupling Analysis

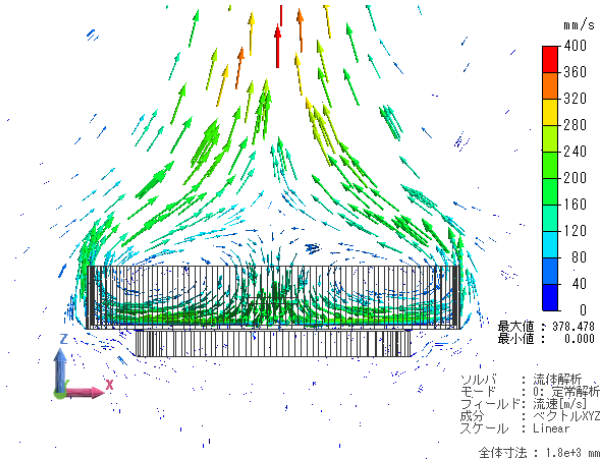
Example : IH cooking heater



Induced Current in a Frying Pan



The temperature on a Frying Pan



Airflow Around a Frying Pan

- Different mesh settings can be applied to the meshes for Magnetic Analysis and Fluid Analysis.
- [Create air domain automatically] for Magnetic Analysis and [Automatic Fluid Creation] for Fluid Analysis can also be used together.

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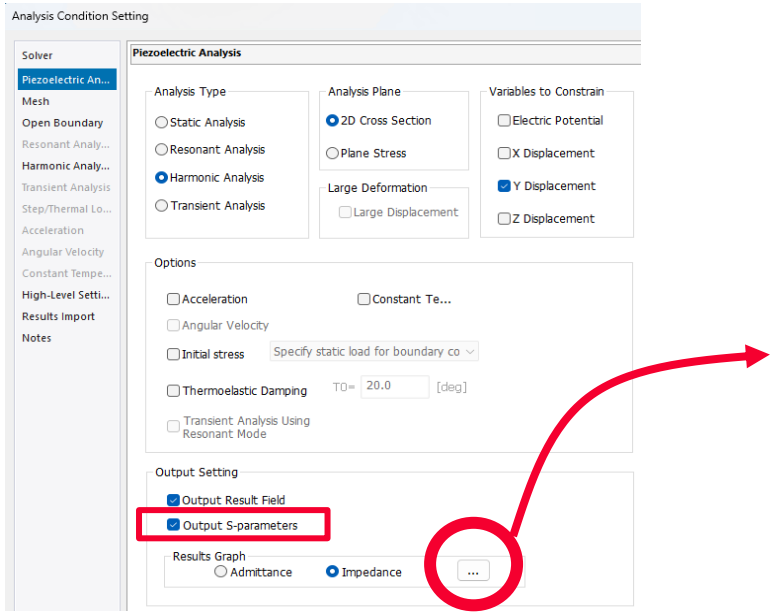
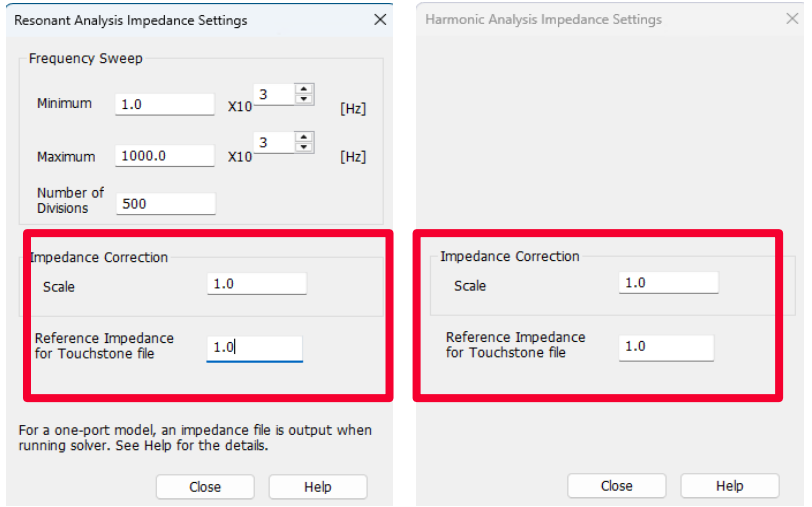
Solver - Piezo Analysis : Adding impedance-related result function

New feature : impedance renormalization, reference impedance specification for Touchstone files, and S-parameter output.





Resonant Analysis setting　　Harmonic Analysis setting

■ Impedance Renormalization (Scaling):

The calculated impedance is multiplied by the specified scale value before output.
When admittance is selected in the output settings, the admittance is multiplied by the scale value before output.
This feature is useful when only part of a model is analyzed using periodic or symmetry boundary conditions.

■ Specify the reference impedance for the Touchstone file.

The data lines in the Touchstone file contain normalized impedance values.

■ S-Parameter Output:

Specify S-parameters as the output format for the Touchstone file.

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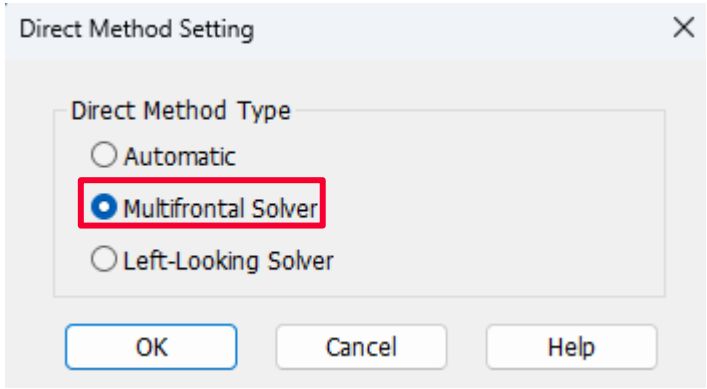
Solver - For all solvers : Adding Multifrontal solver G2

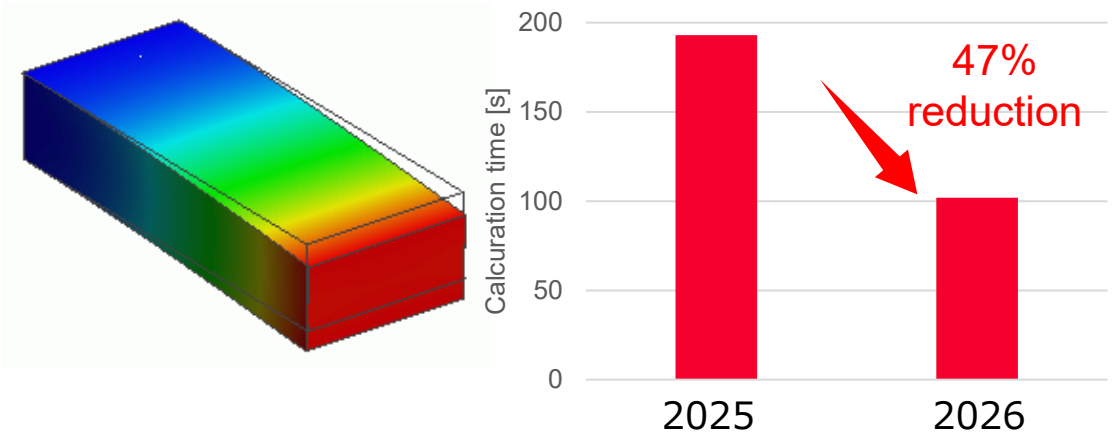
The high-speed Multifrontal G2 solver has been added to the matrix solvers.

The high-speed Multifrontal G2 solver has been added to the matrix solvers.

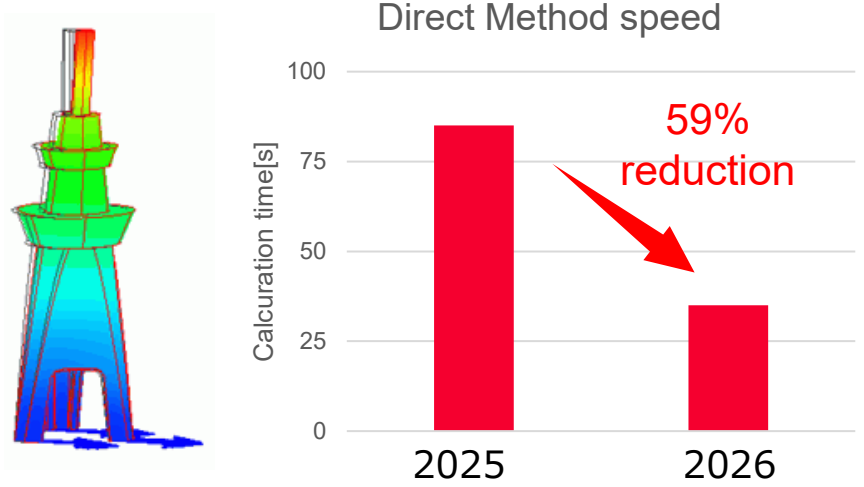
G2 can be used by selecting the Multifrontal solver as the direct method type
(when the Accelerator Option is enabled).



Stress Analysis : Example 1 Static Analysis
(number of elements 444323)



Stress Analysis : Example 50 Resonant Analysis
(number of elements 20908)



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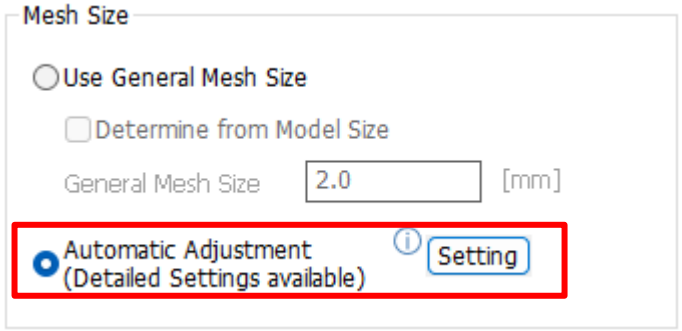
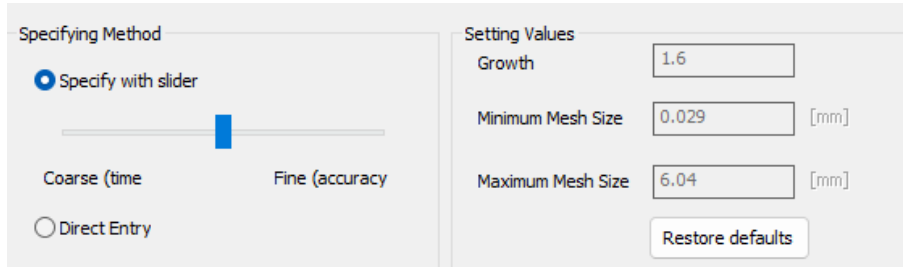
Mesher - Automatic Adjustment Mesh size

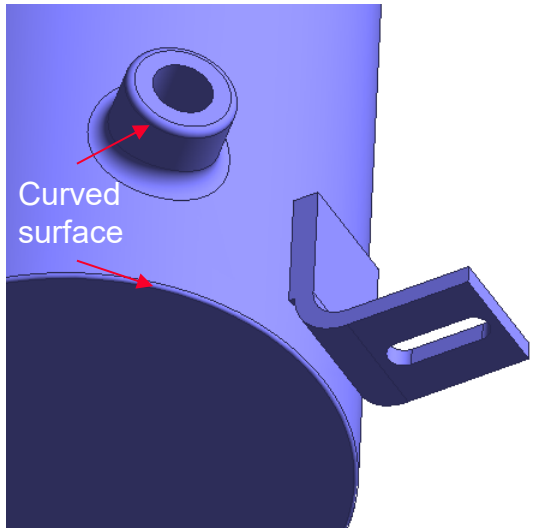
Mesh sizes based on curvature can now be automatically assigned to curved surfaces.
Surrounding mesh sizes can now be gradually increased according to the growth rate.

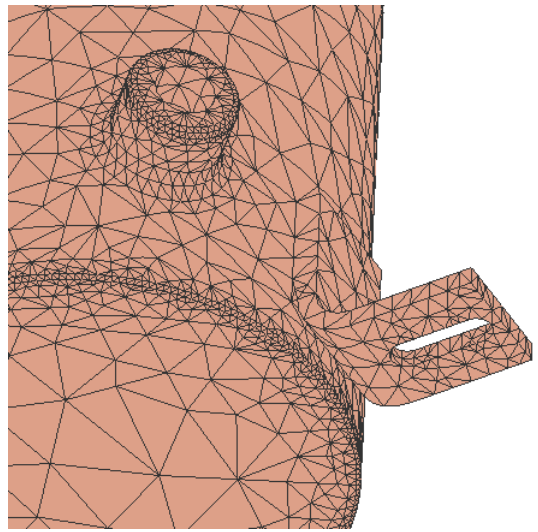


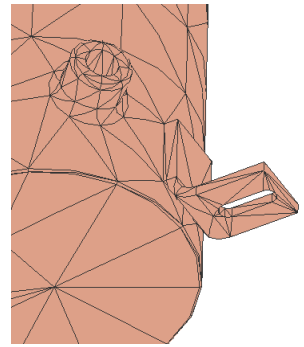
Adding Automatic Adjustment function to Mesh Size tab



Detailed setting can be available







Previous meshing result

Manually specified mesh sizes on surfaces and edges are preserved, allowing manual settings to be combined with automatic adjustment.

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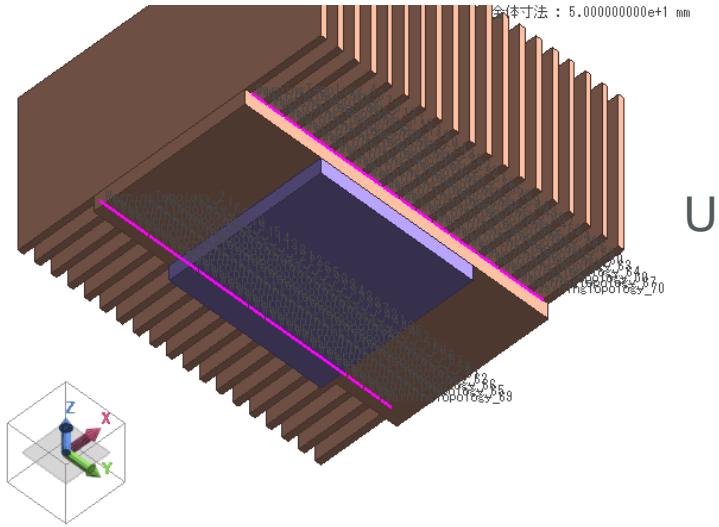
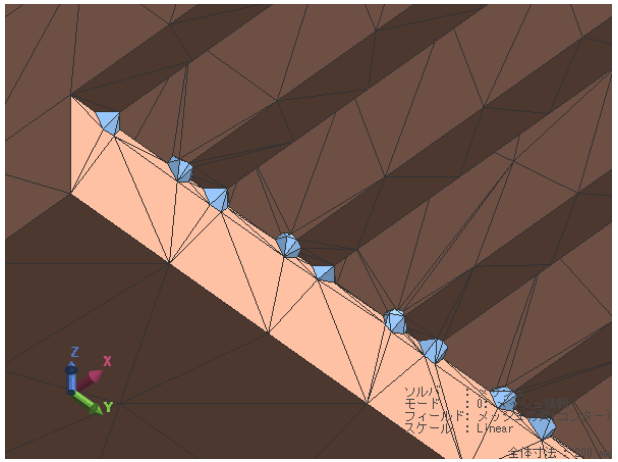
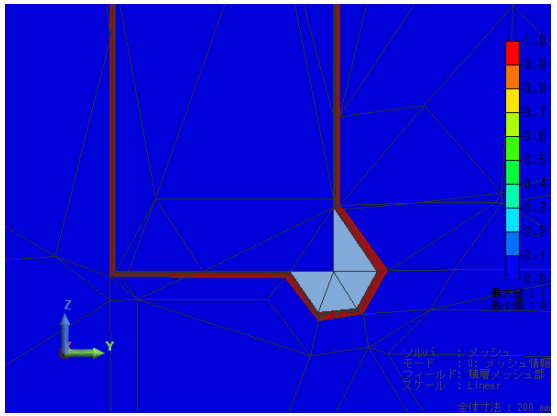
Mesher - Make Layer Mesh generation easier by using model modifications

A feature has been added to support layered mesh generation.



Use this function





Numerous warnings occur in areas where layered meshes cannot be generated.

Automatically place dummy material.
Generate a layered mesh that bypasses the dummy material.

- Depending on the model, some areas may not allow layered mesh generation. These areas are indicated by warnings.
- Areas where layered meshes cannot be generated may reduce analysis accuracy or convergence.
- When this option is enabled, the model is automatically modified in areas where layered meshes cannot be generated, allowing layered meshes to be generated.

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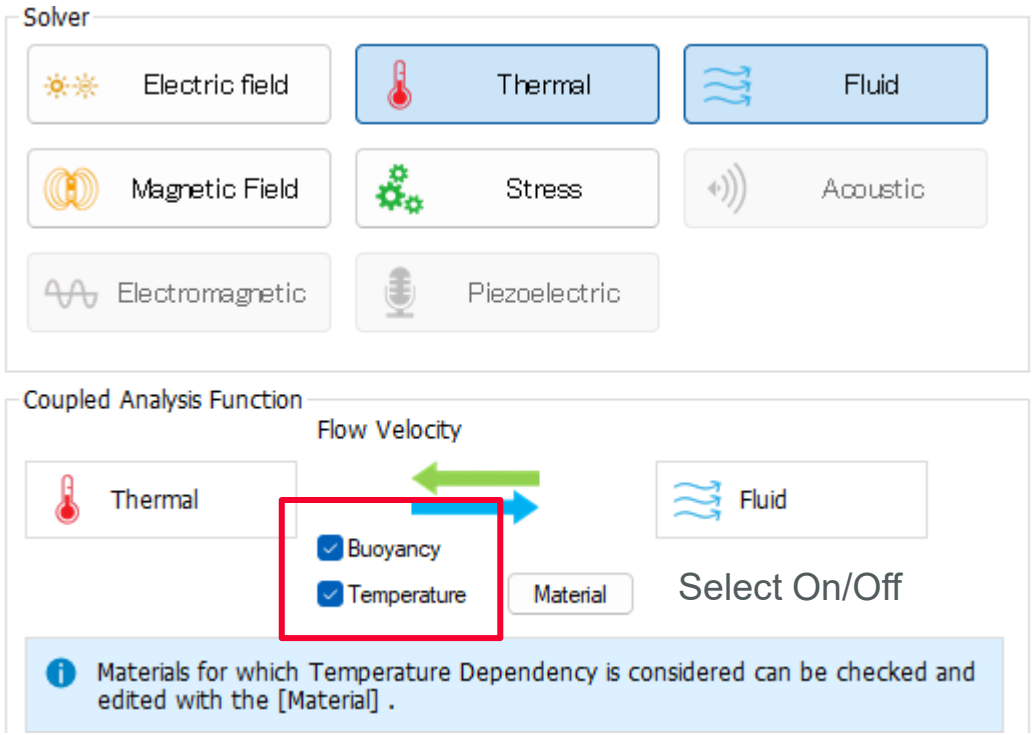
Updating the Solver selection menu to show coupling relations



Switchable options

Coupled Analysis	Options
Electric/Magnetic/Electromagnetic <=> Thermal	Temperature Dependence
Fluid <=> Thermal	Buoyancy (Natural Convection) Temperature Dependence of Fluid Material
Electric Field => Stress	Electrostatic Force Electrostriction
Piezoelectric <=> Acoustic	Sound Pressure (Strong Coupling)

- Displaying the physical quantities transferred in coupled analysis and their transfer directions makes the coupling status easier to understand.
- The transfer of each physical quantity can also be turned on or off on this screen.

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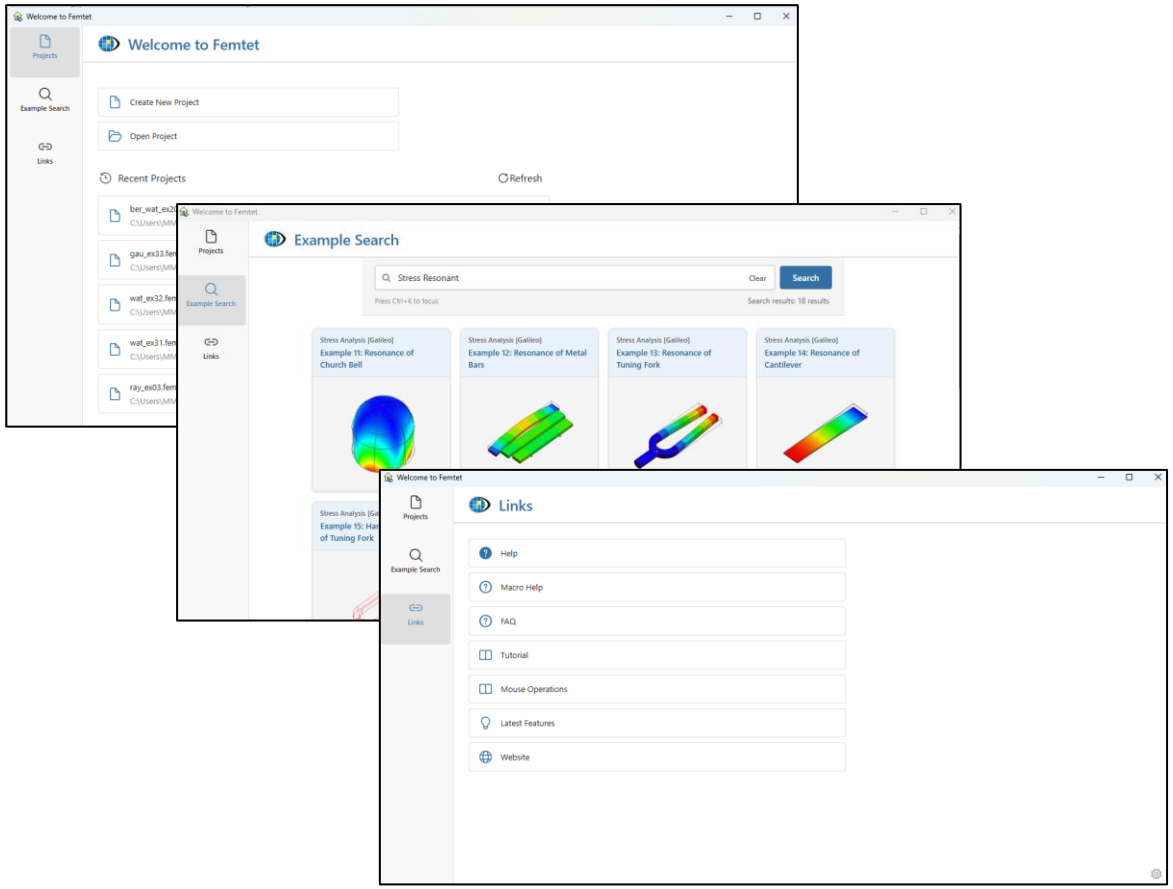
UI - Redesigning Welcome Dialog

The Welcome Dialog has been redesigned as a portal tool.



Keep the Window Open Alongside Femtet

- Replaced the modal dialog with a separate window.
- Allows operation while viewing the analysis screen.

Easy Access to Projects

- Provides quick access to new, existing, and recent projects.

Information Portal

- Provides centralized access to examples, tutorials, and FAQs.
- Provides quick access to information needed for you.

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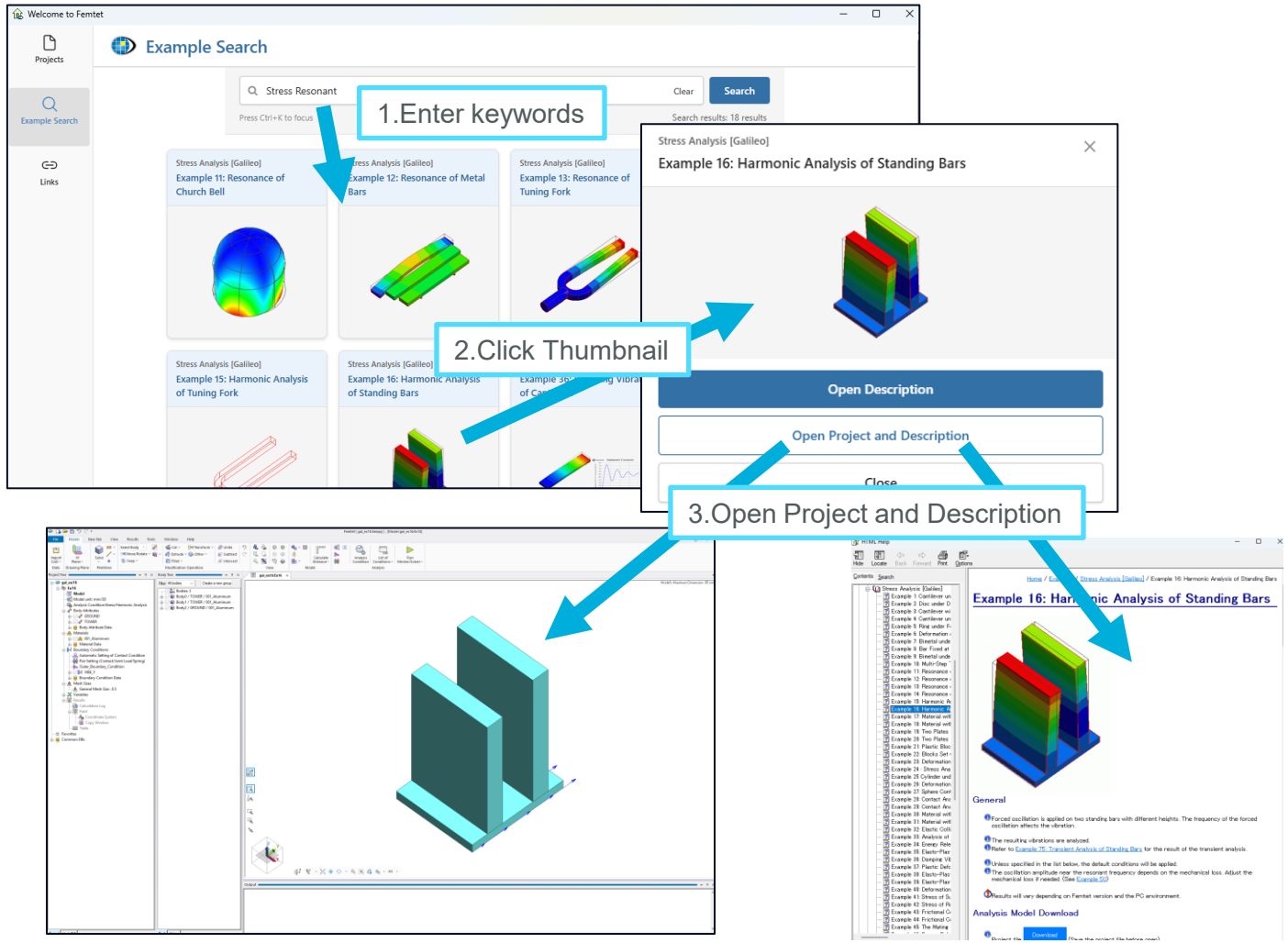
UI - Adding Femtet Example Search

An example search feature has been added.
Analysis examples can be quickly found by keyword.



Quickly Find Analysis Examples

- Perform full-text searches of examples using keywords.
- Easily find relevant analysis examples.

Flexible Search Options

- Synonym search and AND search are supported.
- Efficiently find examples

Run Search Results Immediately

- Show the help from example Search dialog.
- Launch Femtet example projects with a single click.
- Seamlessly proceed from searching to analysis.

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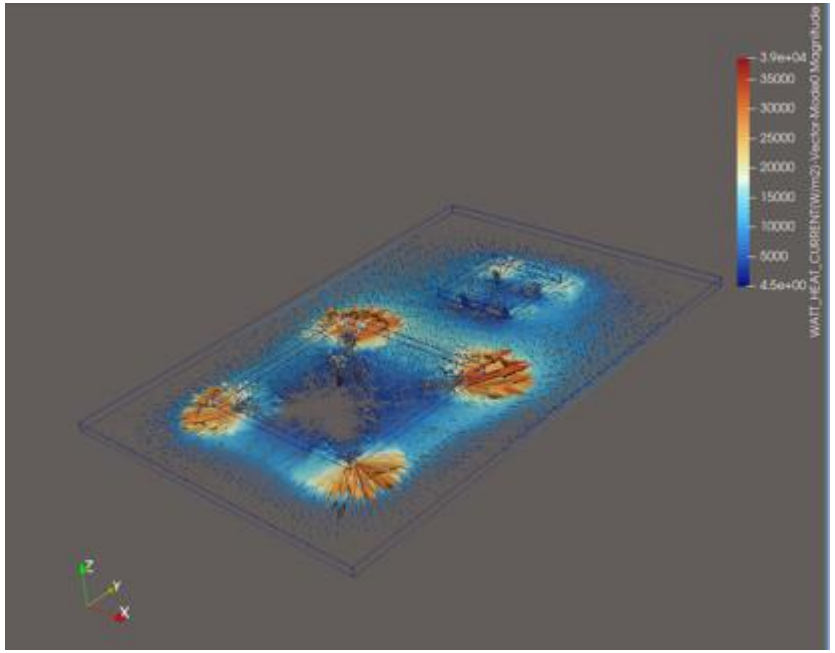
Result Display - Support VTU/JSON format for result output

Export functions for calculation result fields (VTU format) and result tables (JSON format) have been added.
This enables result data to be processed and analyzed using external tools such as Python without using Femtet.



Example of visualizing a VTU file exported from Femtet using the open-source software ParaView (© Kitware, Inc.)


```
{
   "FileVersion": "0.1.0",
   "solvers": [
      {
         "iSolver": 0,
         "SolverLabel": "Thermal Analisys",
         "modes": [
            {
               "iMode": 0,
               "ModeLabel": "Steady Analysis",
               "results": [
                  {
                     "iResultType": 165,
                     "ResultLabel": "Maximum Temp[deg]",
                     "TableLabel": "Temperature[deg]",
                     "Values": [
                        {
                           "SUB": 37.14748498289925,
                           "GND": 36.67827501938187,
                           "MAINCHIP": 37.148058056249646
                        }
                     ]

}
```


Example of Result Table Output in JSON Format

Output is available using the OutputResultFieldVTU and OutputResultTableJSON macros, respectively.
VTU format: An XML-based unstructured grid data format used by VTK (Visualization Toolkit).

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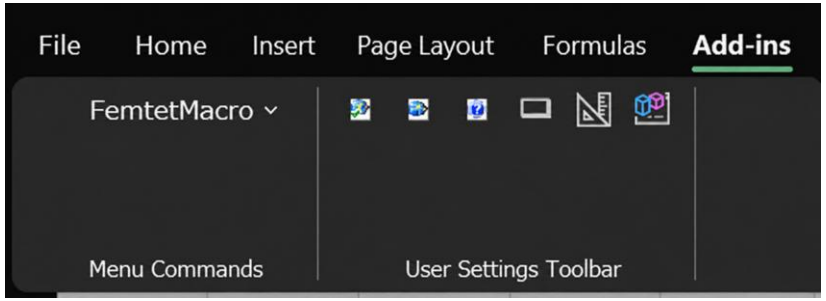
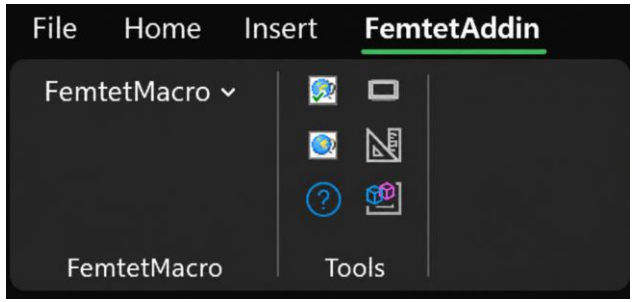
Macro - Updating Excel add-in UI and adding new feature

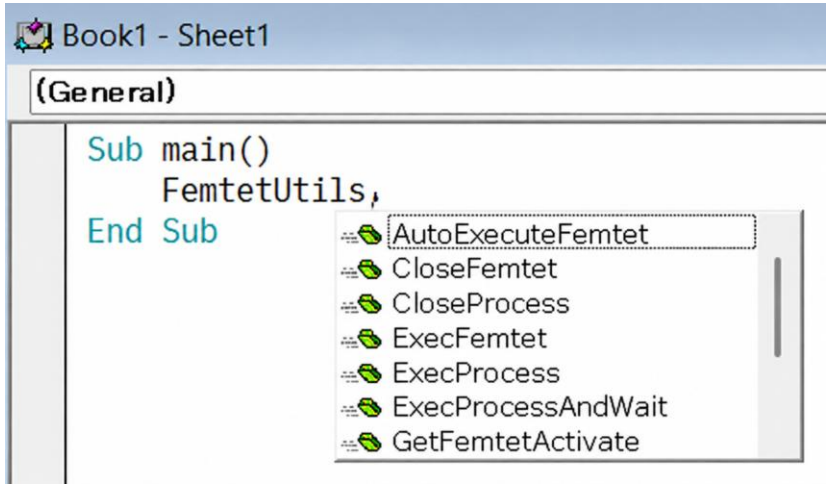
The speed and stability of the Excel add-in have been improved, and autocomplete in the VBE is now supported.



Previous Add-ins



New FemtetAddin



Autocomplete

- **UI Update :**
  The ribbon UI has been updated, improving startup speed.
  An issue that caused Excel to crash at startup under certain conditions has been fixed.
- **Improved Macro Usability :**
  Autocomplete for Femtet utility functions is now available in the VBE (Visual Basic Editor) when creating macros.

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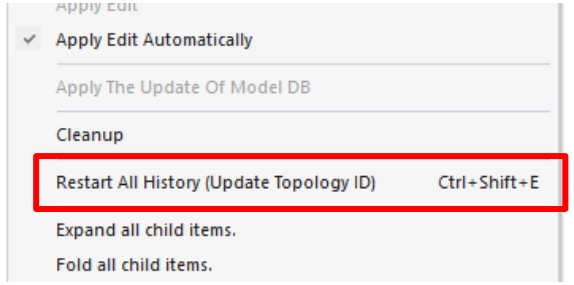
Notice for Project Files (.femprj) and Macros Due to the Parasolid Update

About project file

- Project files saved in previous versions can be opened in Ver. 2026.0.
  (Backward compatibility allows older data to be used in newer versions.)
- Project files saved in Ver. 2026.0 cannot be opened in Ver. 2025.1 or earlier.(Forward compatibility, which allows newer data to be used in older versions, is not supported.)
- When working collaboratively, the same version of Femtet must be used.

About Macro file

- Existing macros that use topology IDs may not operate correctly in Ver. 2026.0. For details, refer to the following page in the Macro Help: “Home / If a Macro created with an older version of Femtet does not work correctly”
- When exporting a macro from a project saved in a previous version, the topology IDs must first be updated. Right-click in the history tree, execute [Restart All History], and then export the macro.



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