



DIAMOND 2016

(SAFIR[®] post-processing tool)

New features



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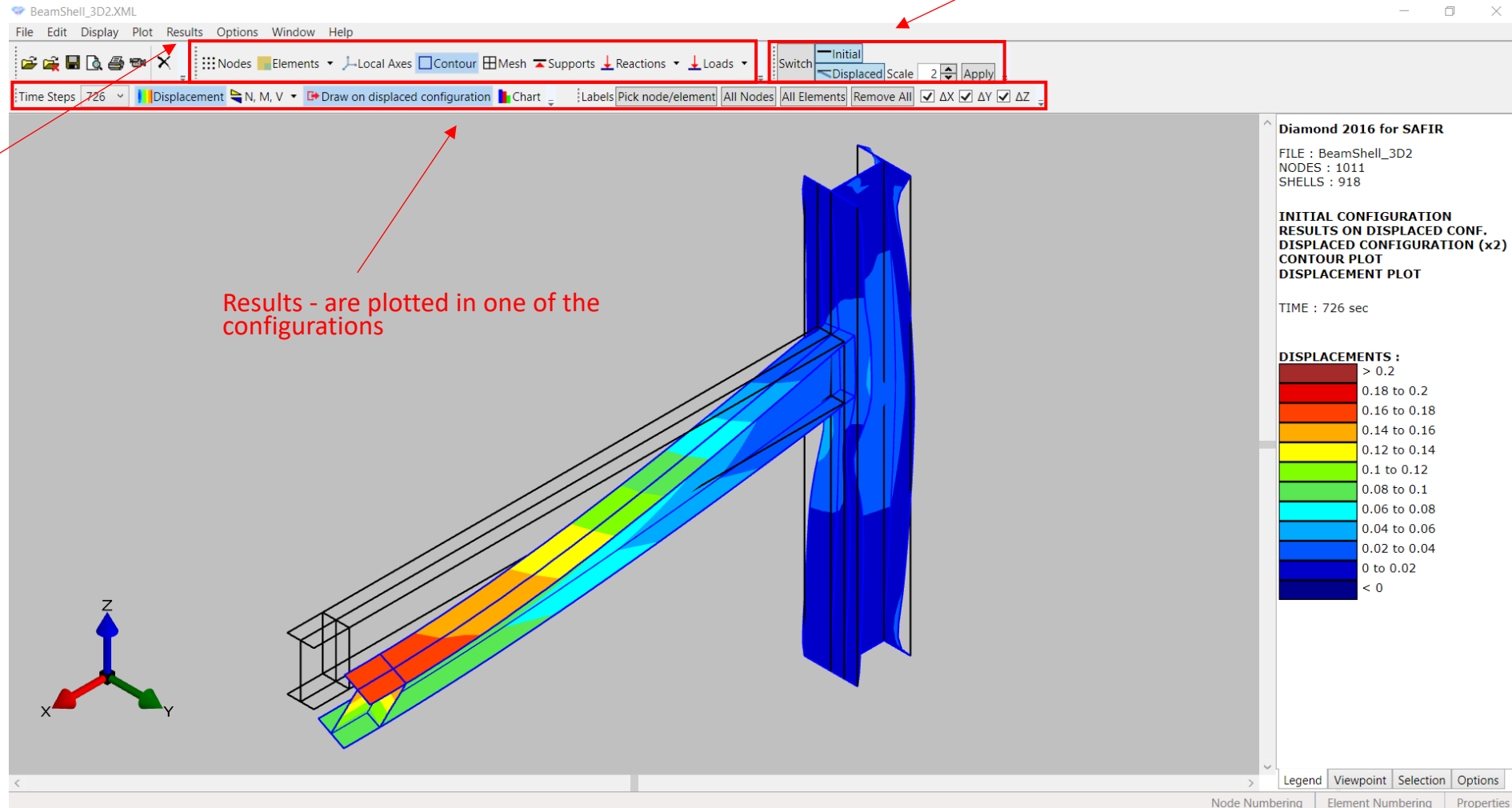
Organization of the graphical interface

- Some differences in the logic and arrangement of the GUI

Configuration - the model entities can be drawn in the initial, in the displaced, or in both configurations

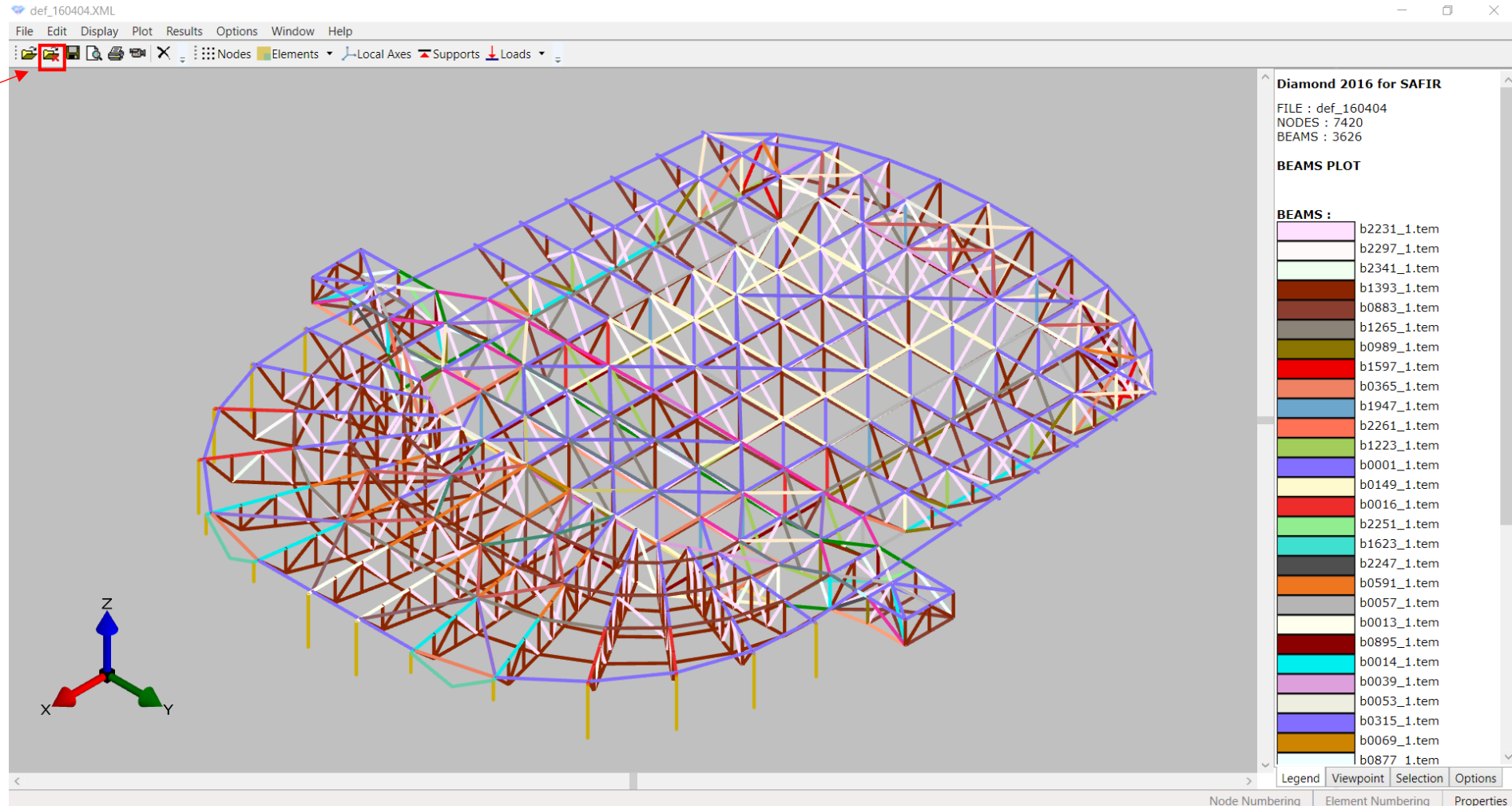
Model entities

Results - are plotted in one of the configurations



Open file without results

- Allows to quickly check models in big files



Scale factors

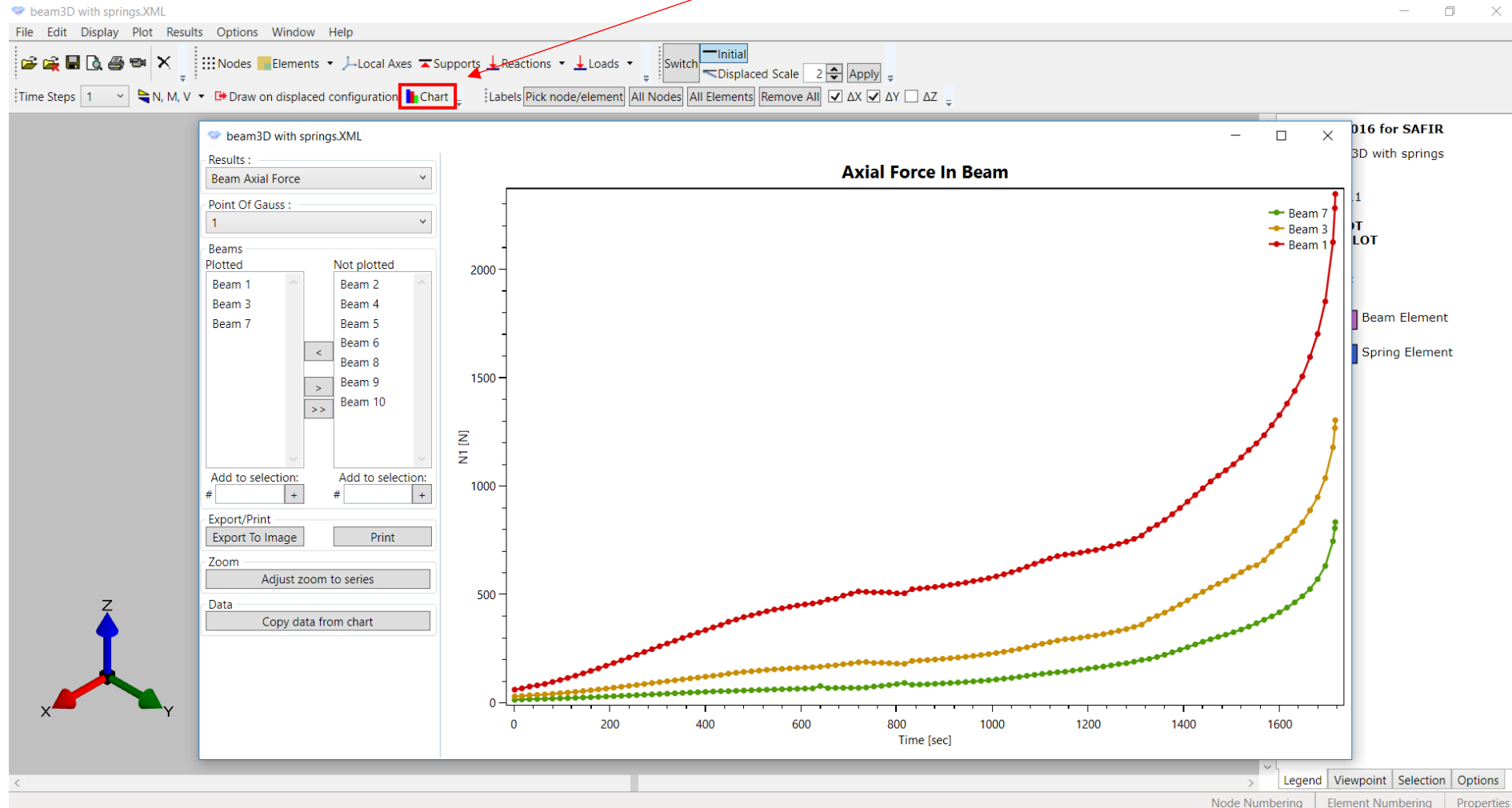
- More clear way of setting the scale factors for loads and forces

The screenshot displays a software interface for a finite element analysis of a truss structure. The main window shows a 2D truss model with a gabled roof and two vertical columns. A coordinate system is visible in the bottom-left corner with X and Y axes. The software's menu bar includes File, Edit, Display, Plot, Results, Options, Window, and Help. The toolbar contains various icons for file operations and analysis settings. A settings panel on the right side is open, showing options for Automatic and User settings. The 'User' settings are selected, and the 'Scale factors' section is highlighted with a red box. A red arrow points to this section.

Scale factor	Value
1 N (Ponctual loads) =	0.0001 m
1 N/m (Linear Loads) =	0.001 m
1 N/m ² (Surface Loads) =	0.01 m
1 N (Reactions) =	0.0001 m
1 N (Force Diagrams) =	0.0001 m
1 Nm (Bend. Mom. Diag.) =	0.0001 m
1 N (Spring Forces) =	0.001 m
1 N/m ² (Spring Press.) =	0.001 m
1 kN/m (Memb. Forces) =	0.0001 m
1 kNm/m (Bend. Forces) =	0.0001 m

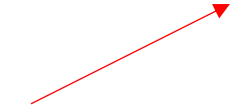
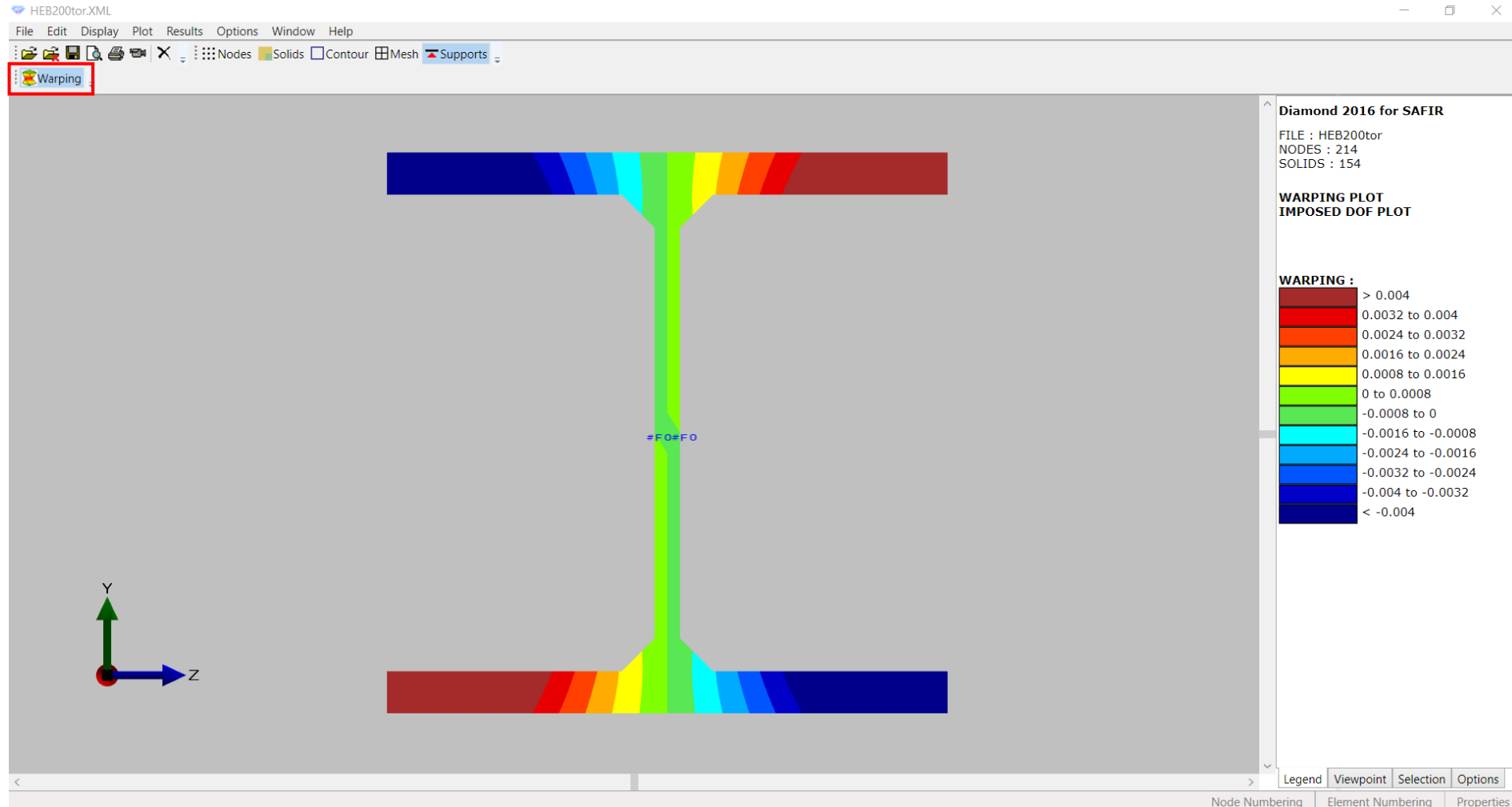
Charts

- Improved user experience with charts



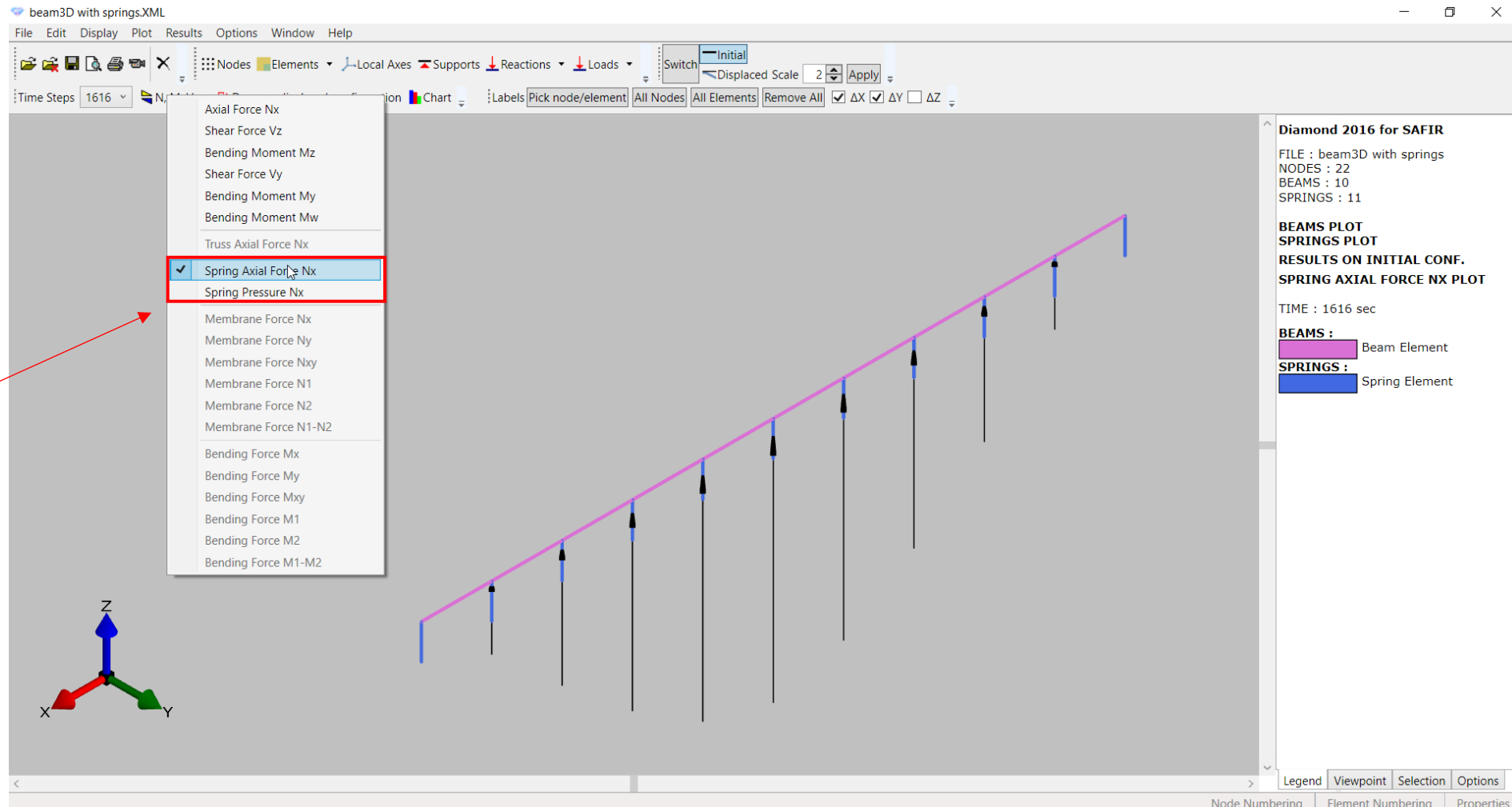
Torsional analysis

- Distribution of the results for the warping function in the cross-section



Springs

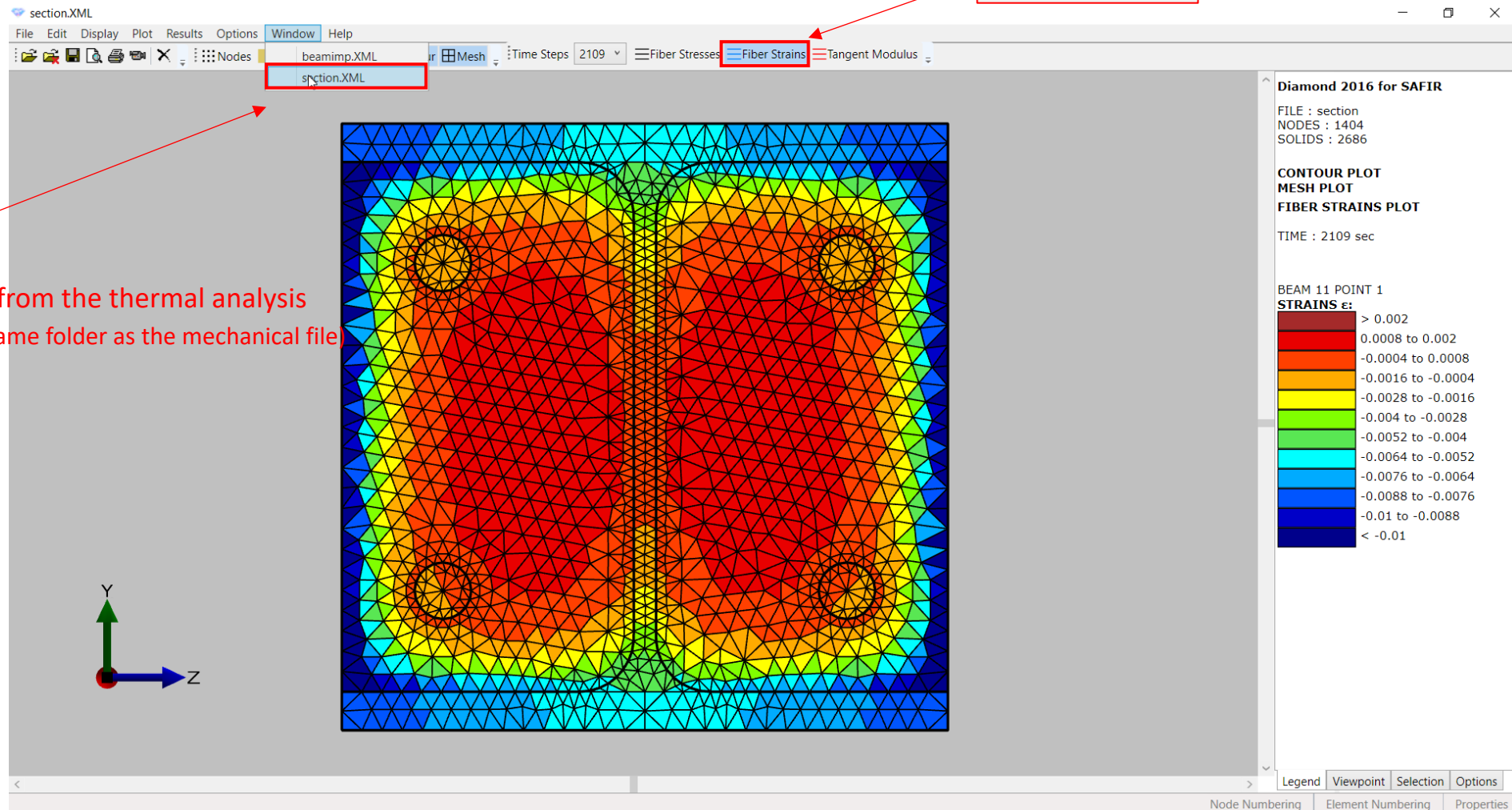
- Forces and pressures in Springs



Strains, stresses and tangent modulus

- Strains can now be plotted on the cross-section fibres

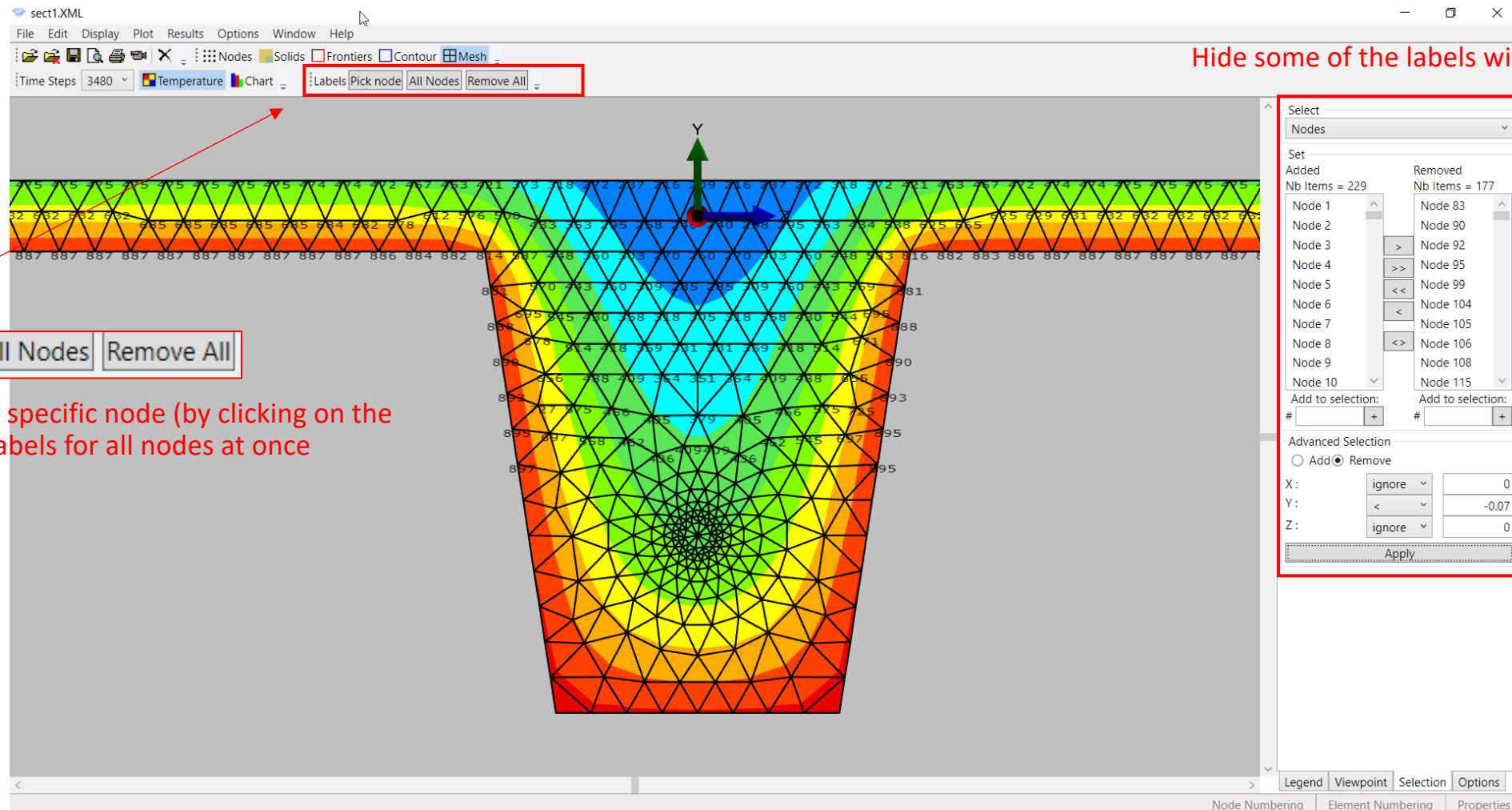
Fiber Strains



XML file resulting from the thermal analysis
(must be inside the same folder as the mechanical file)

Labels in thermal analyses

- Temperatures



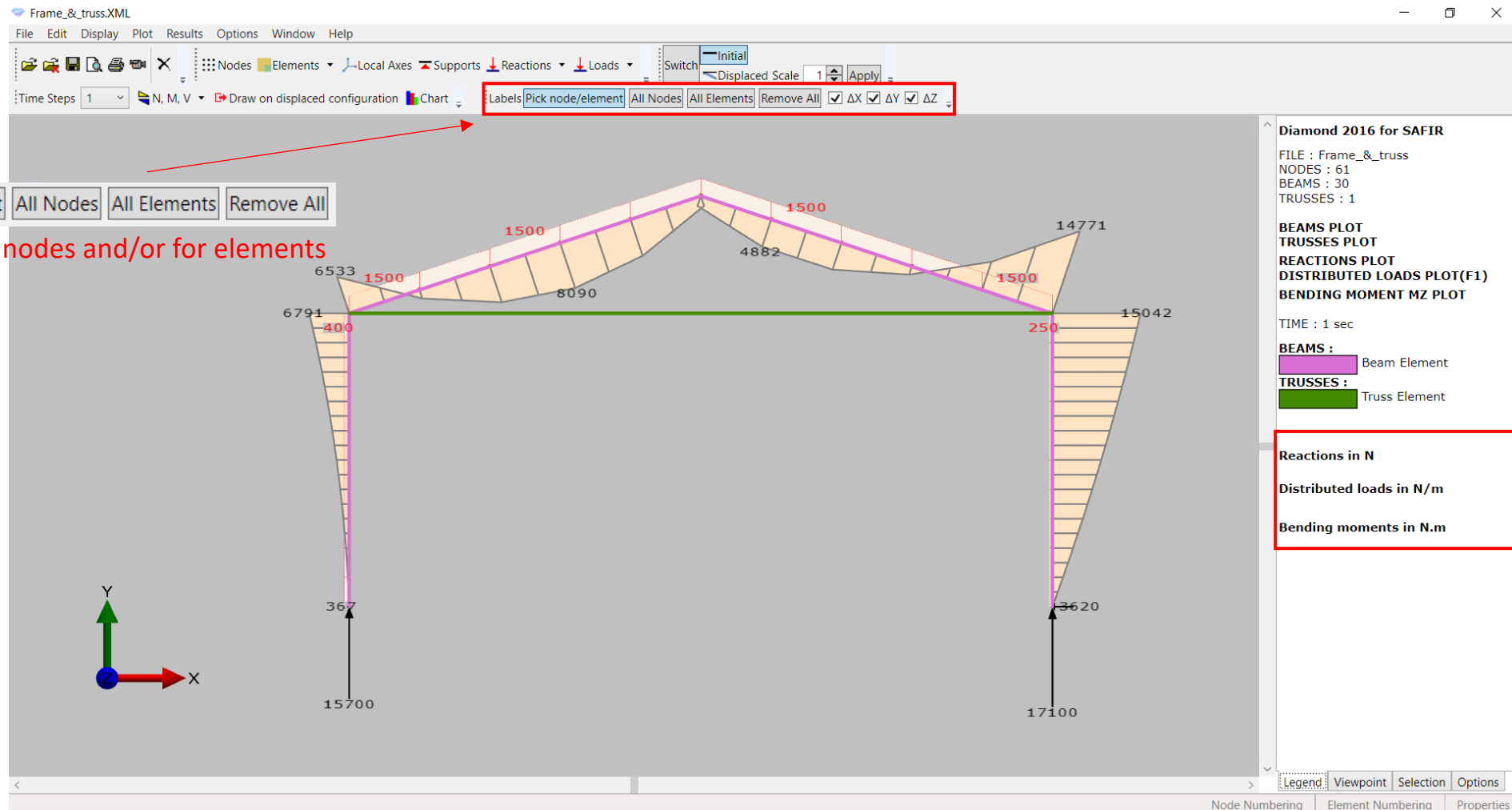
Hide some of the labels with the Selection tool

Labels Pick node All Nodes Remove All

Add the label for a specific node (by clicking on the node) or add the labels for all nodes at once

Labels in mechanical analyses

- Loads, reactions and forces



Labels Pick node/element All Nodes All Elements Remove All
Add the labels for nodes and/or for elements

Units

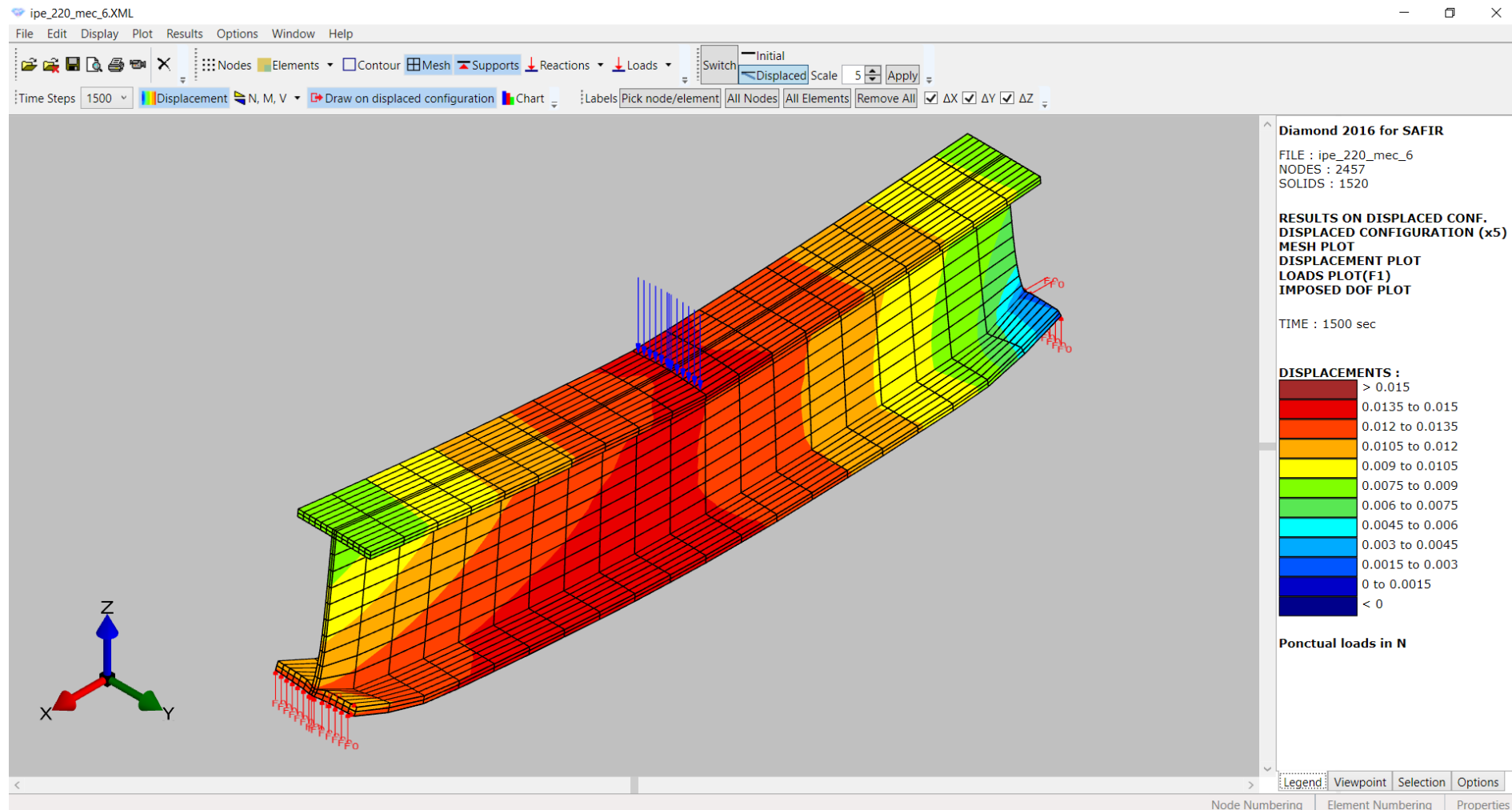
Labels in mechanical analyses

- Displacements

The screenshot displays a software window titled "Frame_&_truss.XML" with a menu bar (File, Edit, Display, Plot, Results, Options, Window, Help) and a toolbar. The main workspace shows a truss structure with displacement labels at three nodes: $\Delta X = +139$, $\Delta Y = +167$ at the top peak; $\Delta X = +109$, $\Delta Y = +53$ at the left base; and $\Delta X = +168$, $\Delta Y = +51$ at the right base. A coordinate system with X and Y axes is shown at the bottom left. A legend on the right identifies "Beam Element" (purple) and "Truss Element" (green). A red box highlights the "Displacements labels in mm" option in the legend, with a red arrow pointing to it and the word "Units" next to it. Another red box highlights the displacement label options (ΔX , ΔY , ΔZ) in the toolbar, with a red arrow pointing to it and the text "Select the components of the displacements" next to it.

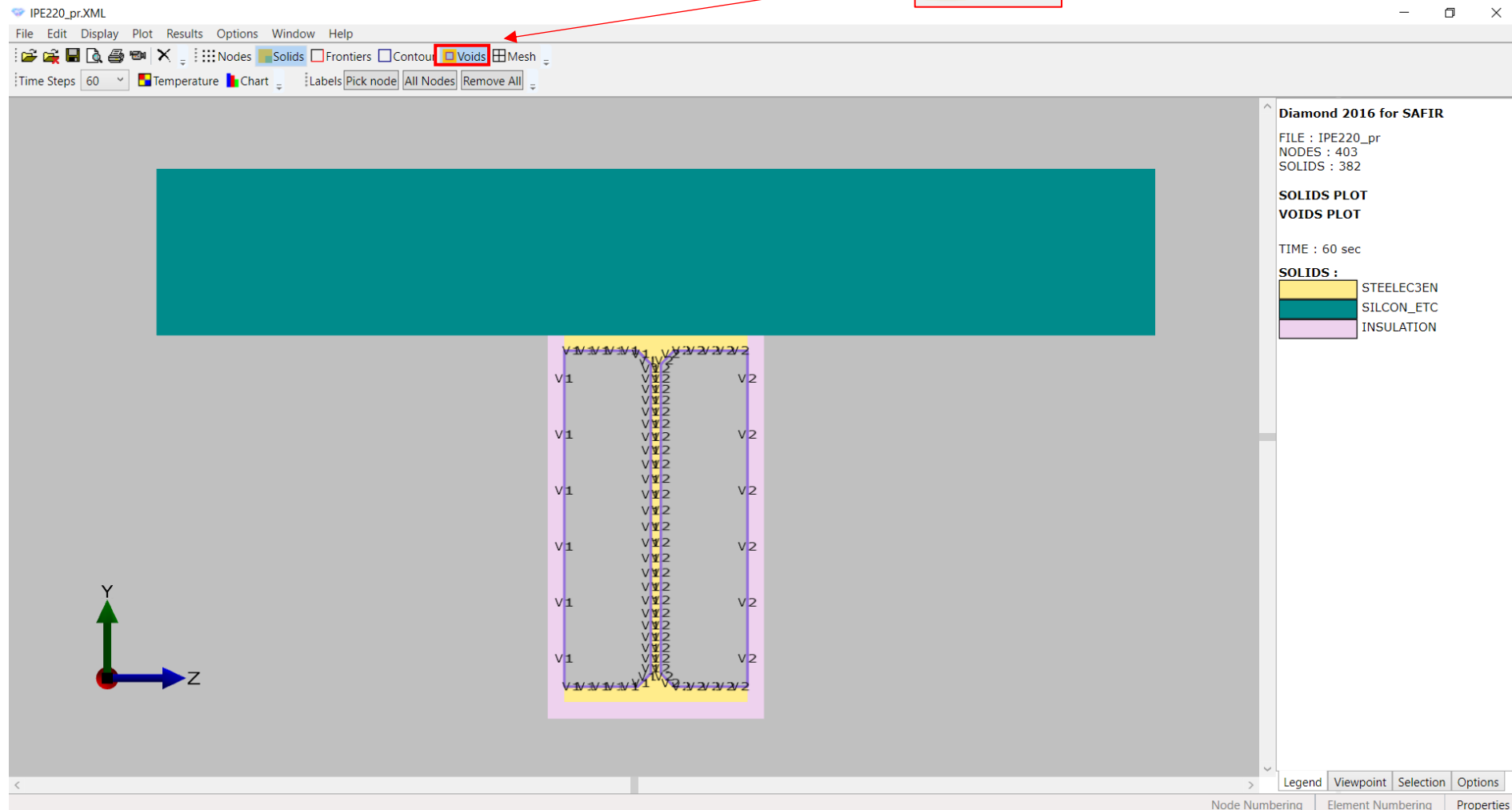
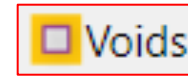
Structural SOLID 3D

- SOLID 3D finite elements available in mechanical models



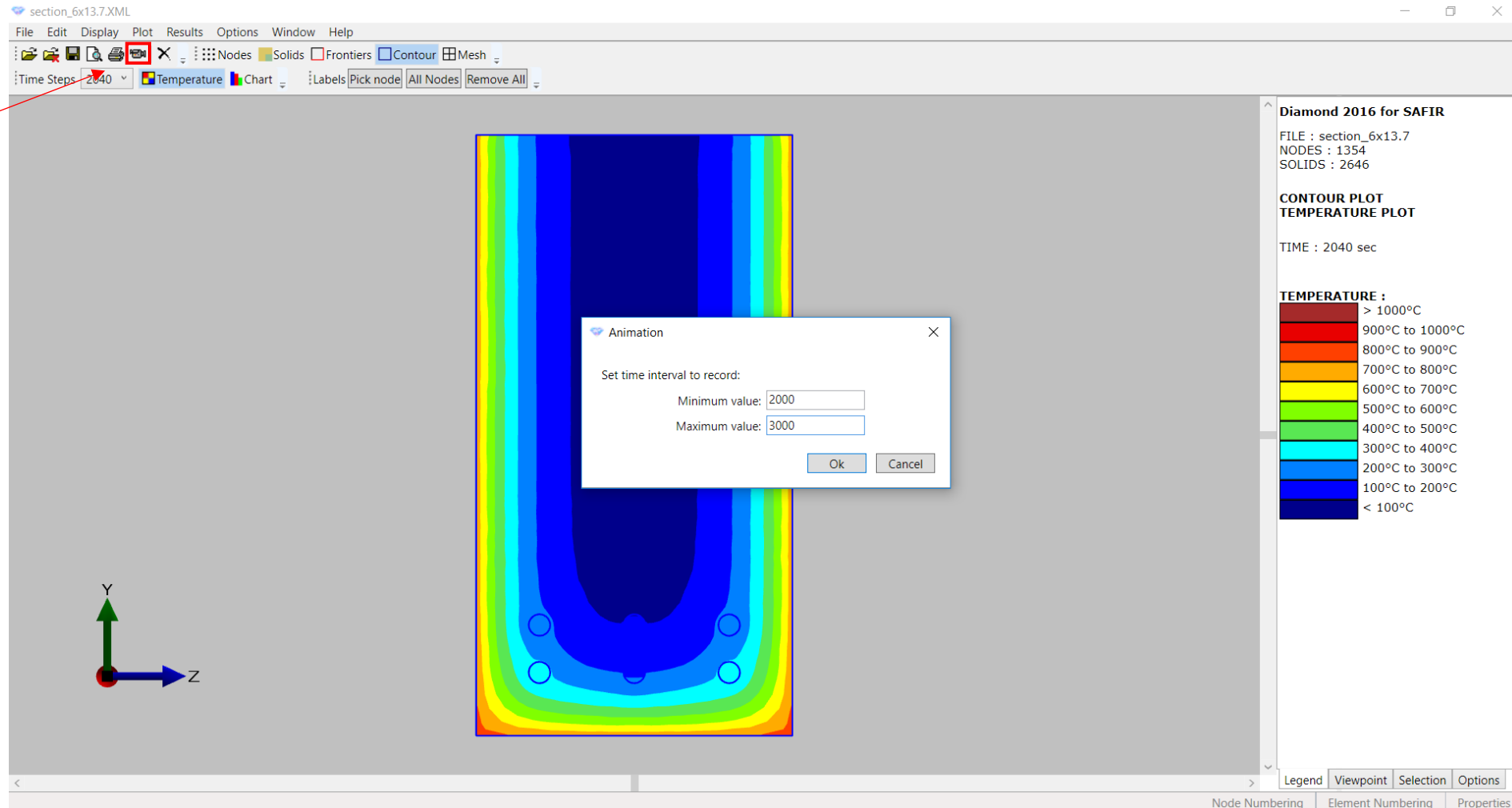
VOID

- VOIDs in thermal models can now be visualized



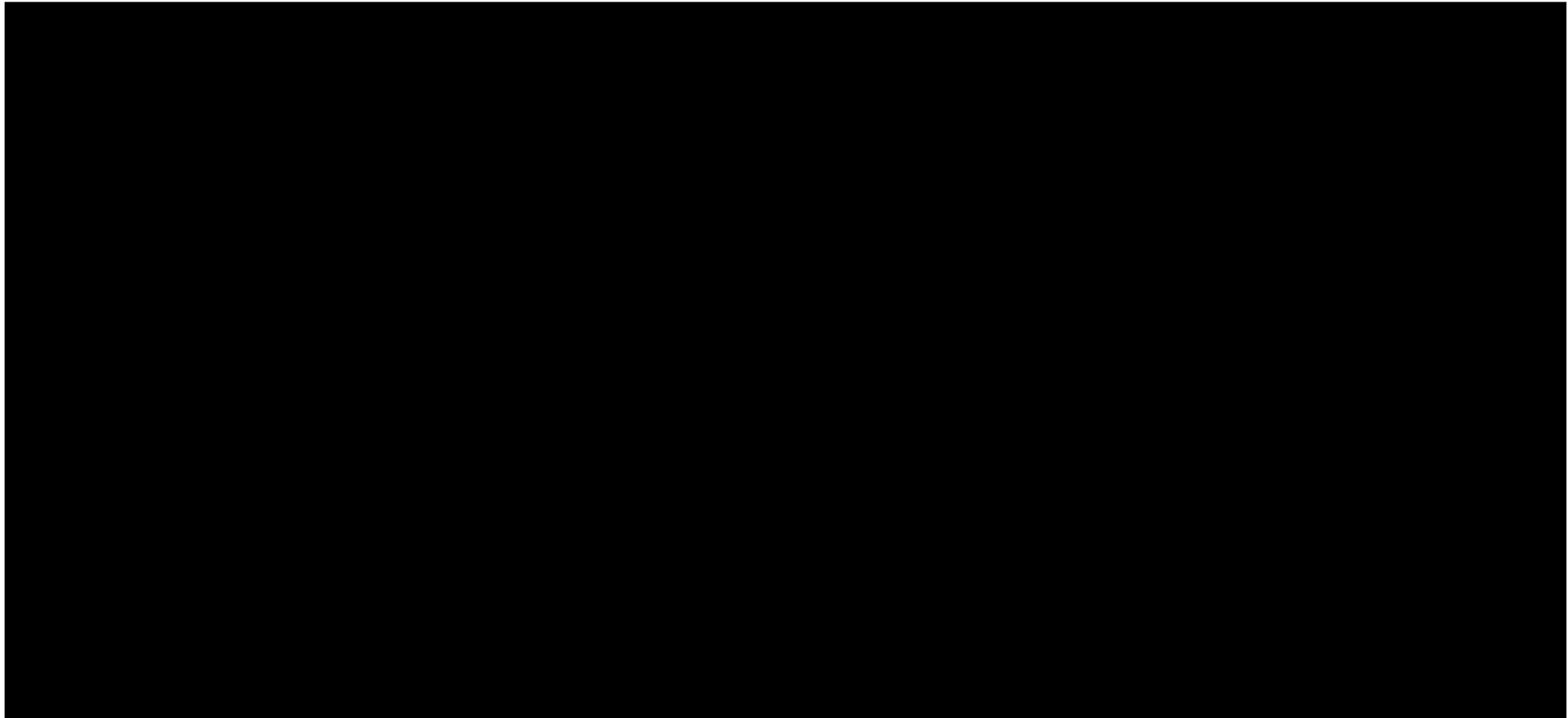
Animation tool

- Time interval for the video animation



Animation tool

- Time interval for the video animation



Thank you for you attention

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New features

