



# Starting with Z-set

**This training is an introduction to structural analysis with Z-set, software for the calculation and analysis of non-linear structures and materials.**

This introductory course gives a quick and comprehensive introduction to the applications of Z-set software. It is recommended to engineers who are willing to use Z-set as a finite element solver for the simulation of general non-linear thermomechanical problems. This one-day training provides basic knowledge

about the workflow and setup steps to perform nonlinear structural analyses with Z-set. Questions about the Zebulon FE solver will be answered.

## LEVEL



**Beginner**

## PREREQUISITES



**A good basic knowledge of Finite Element Analysis is required.**

## GOALS



- **Understanding of Z-set's simulation workflow**
- **Data setup for non-linear structural analysis**
- **Launching computations**
- **Results visualization, interpretation and analysis**
- **Performing simple post-processing analyses**

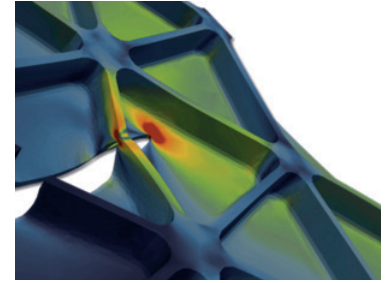


TRAINING	DURATION	PRICE TAXES NOT INCL.	PARTICIPANTS
In-company	1 day	1400 € per training	1 to 3 people

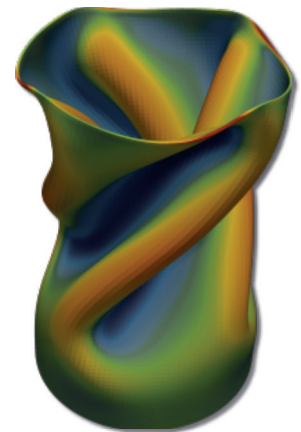
**Contact us to set the course date and location.**

**DAY 1 >** 8.30 a.m. to 12.00 p.m. & 1.30 p.m. to 5.00 p.m.

<p><b>Introduction</b></p>	<ul style="list-style-type: none"> <li>• Transvalor presentation</li> <li>• Course goals</li> </ul>
<p><b>Simulation workflow and setup</b></p>	<ul style="list-style-type: none"> <li>• Quick review of software installation (Linux, Windows), environment variables</li> <li>• Presentation of Z-set's distribution (documentation, tests base)</li> <li>• Presentation of software modules and specific input files (mesh, material file, main simulation input file, post-processing input file)</li> <li>• Running commands, keywords (-m, -pp)</li> <li>• Mesh generation with Z-master, mesh import</li> <li>• Detailed presentation of Zebulon input file</li> <li>• Prescribing boundary conditions</li> <li>• Rheology, material card, material data</li> <li>• Output controls</li> <li>• Application to tutorial cases (2D, 3D, linear, nonlinear)</li> </ul>
<p><b>Computation</b></p>	<ul style="list-style-type: none"> <li>• Quick launch, multicore execution</li> <li>• Computation restart procedure</li> </ul>
<p><b>Results analysis</b></p>	<ul style="list-style-type: none"> <li>• Results files</li> <li>• Results visualization: displacements, reactions, Von Mises, material variables</li> <li>• Basic data extraction (nodal values, visualization on element sets)</li> <li>• Visualization of curves, animations</li> <li>• Results postprocessing (simple example)</li> </ul>
<p><b>Conclusions</b></p>	<ul style="list-style-type: none"> <li>• Questions and course assessment</li> </ul>



Simulation of fatigue crack growth in an Isogrid Panel (collaboration with AIRBUS and Constellium)



Plastic torsional buckling of a thin-walled tube