NEW

# 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

**Good basic knowledge of Finite Element Analysis**

## 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.

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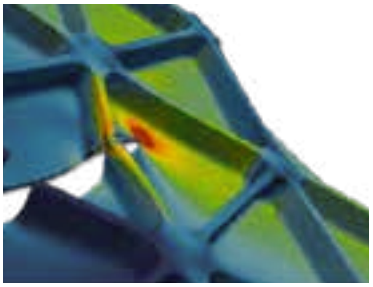
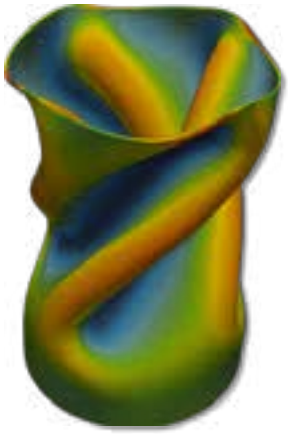
|---|---|
| **Introduction** | · Transvalor presentation<br>· Course goals |
| **Simulation workflow and setup** | · Quick review of software installation (Linux, Windows), environment variables<br>· Presentation of Z-set's distribution (documentation, tests base)<br>· Presentation of software modules and specific input files (mesh, material file, main simulation input file, post-processing input file)<br>· Running commands, keywords (-m, -pp)<br>· Mesh generation with Z-master, mesh import<br>· Detailed presentation of Zebulon input file<br>· Prescribing boundary conditions<br>· Rheology, material card, material data<br>· Output controls<br>· Application to tutorial cases (2D, 3D, linear, nonlinear) |
| **Computation** | · Quick launch, multicore execution<br>· Computation restart procedure |
| **Results analysis** | · Results files<br>· Results visualization: displacements, reactions, Von Mises, material variables<br>· Basic data extraction (nodal values, visualization on element sets)<br>· Visualization of curves, animations<br>· Results postprocessing (simple example) |
| **Conclusions** | · Questions and course assessment |



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



Plastic torsional buckling of a thin-walled tube