Z-SET

Z-mat connection to external Finite Element solvers

Z-mat includes several pieces of software which constitute an efficient set of tools for advanced material-oriented FE analysis. In this course, you will learn advanced Z-mat's material models used within major Finish Elements solvers.

This one-day training session provides basic knowledge about the use of Z-mat and major external FE solvers like Abaqus, Ansys and Samcef, and a large base of constitutive plasticity and viscoplasticity models. Participants will discover the technical aspects, available tools and options of the Z-mat's interface. In addition, the results interfaces that enable the use of Z-master and Z-post modules for visualization and data post-processing will be presented.

LEVEL

Beginner

PREREQUISITES

A good basic knowledge of User Material Modeling is required.
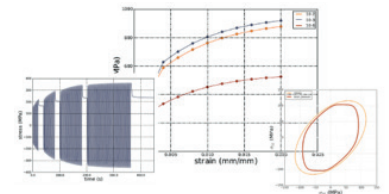
GOALS

- **Understanding of User Material subroutine principles**
- **Setup of simulations with linear and non-linear material models**
- **Launching computations**
- **Results visualization, interpretation and analysis**

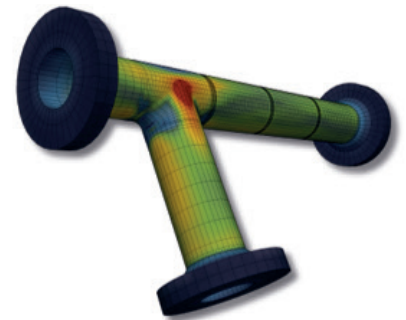| TRAINING	DURATION	PRICE TAXES NOT INCL.	PARTICIPANTS
In-company	1 day	1400 € per training	1 to 3 people

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.

Introduction	· Transvalor presentation · Course goals
Simulation workflow & setup	· Quick review of software installation (Linux, Windows), environment variables, connection to external FE solvers · Presentation of Z-set's distribution (documentation, tests base) · Getting started: native material model vs user material model · Examples of basic Z-mat's material models · Z-sim: material model driver · Internal variables, storage, Zpreload utility, 2D/3D cases · Setup with Z-mat or external FE solvers · Analysis of tutorial cases
Computation	· Simulation launching scripts · Multicore execution
Results analysis	· Results files · Understanding of stored fields · Results visualization with native viewers and Z-master
Advanced capabilities	· Advanced controls and options (integrators, modifiers, debug) · Multi-material models · Structural elements, plane-stress analysis · Cluster submission · Connection to Z-post (simple post-processing example)
Conclusions	· Questions and course assessment

Constitutive laws

Tube connections under thermomechanical fatigue (collaboration with EDF)