



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 Finite 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

Good basic knowledge of User Material Modeling

GOALS

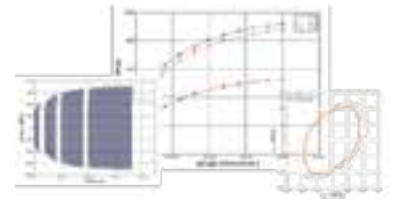
- Understanding of User Material subroutine principles
- Setup of simulations with linear and non-linear material models
- Launching computations
- Results visualization, interpretation and analysis

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

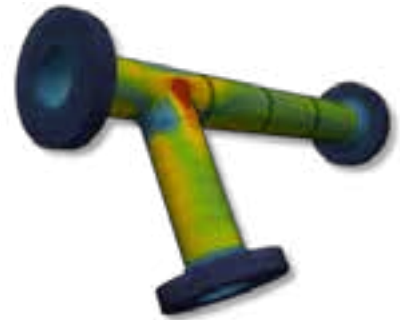
Contact us to set the course date and location.

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

Introduction	<ul style="list-style-type: none"> • Transvalor presentation • Course goals
Simulation workflow & setup	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Simulation launching scripts • Multicore execution
Results analysis	<ul style="list-style-type: none"> • Results files • Understanding of stored fields • Results visualization with native viewers and Z-master
Advanced capabilities	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Questions and course assessment



Constitutive laws



Tube connections under thermomechanical fatigue (collaboration with EDF)