Z-SET

Starting with Z-cracks

Do you want to learn how to analyze fatigue cracks? Would you like to accurately predict crack paths and propagation kinetics? Discover how to use Z-cracks, the module for 3D fracture mechanics simulation.

This one-day training course is intended for engineers and researchers who already have relevant experience in fracture mechanics.
The goal of this training is to demonstrate the capabilities of the Z-cracks module to perform static crack analysis and crack propagation simulations.

LEVEL

Beginner

PREREQUISITES

A good basic knowledge of fracture mechanics is required.

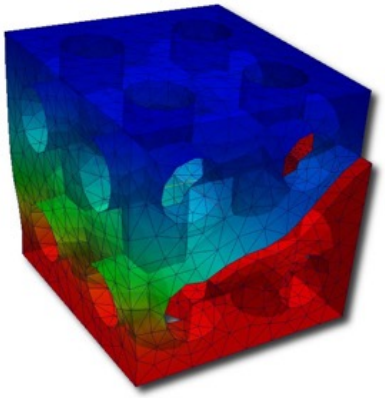
GOALS

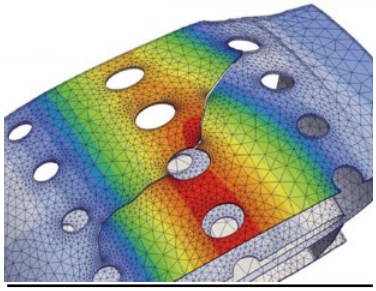
- **Understanding of Z-cracks' principles and simulation workflow**
- **Setup of static crack and crack propagation simulations**
- **Launching computations**
- **Visualization, interpretation and analysis of results**
- **Introduction to advanced user capabilities**

TRAINING	DURATION	PRICE EXCL. TAX	PARTICIPANTS
In-company	1 day	€1400 per training	1 to 3 people

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

Introduction	▪ Presentation of Transvalor ▪ Course goals
Simulation work-flow and setup	▪ Quick review of software installation (Linux, Windows), environment variables, connection to external FE solvers ▪ Presentation of Z-set distribution (documentation, tests base) ▪ Running scripts ▪ Presentation of Z-cracks' GUI and main principles ▪ Getting started: importing models ▪ Crack definition and insertion, remeshing principles and strategies ▪ Stress intensity factors: setup of SIF analysis ▪ Propagation analysis: setup and propagation laws ▪ Z-cracks' scripts presentation ▪ Application to tutorials
Computation	▪ Launching simulations, multicore execution ▪ Computation restart procedure
Results analysis	▪ Results files ▪ Results visualization, curves visualization ▪ Results merging and animations
Advanced capabilities	▪ Advanced options ▪ Non-linear material models ▪ Contact between cracks lips ▪ User propagation laws ▪ Complex loading histories ▪ Scripts for automated simulations
Conclusions	▪ Questions and course assessment





Numerical simulation of a cracked combustion chamber under thermomechanical fatigue loading

TRANSVALOR A NEW GENERATION SIMULATION EXPERIENCE