



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 to 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

Good basic knowledge of fracture mechanics.

GOALS

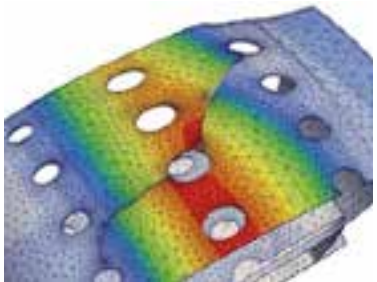
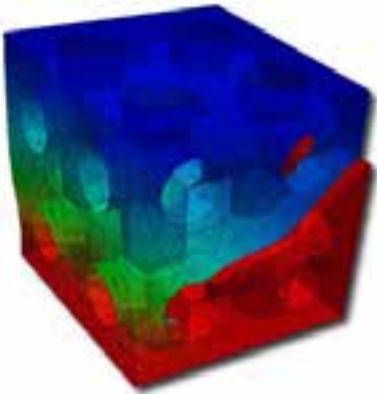
- **Understanding of Z-cracks' principles and simulation workflow**
- **Setup of static crack and crack propagation simulations**
- **Launching computations**
- **Results visualization, interpretation and analysis**
- **Introduction to advanced user capabilities**

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 and 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 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 tutorial cases
Computation	<ul style="list-style-type: none"> • Launching simulations, multicore execution • Computation restart procedure
Results analysis	<ul style="list-style-type: none"> • Results files • Results visualization, curves visualization • Results merging and animations
Advanced capabilities	<ul style="list-style-type: none"> • Advanced options • Non-linear material models • Contact between cracks lips • User propagation laws • Complex loading histories • Scripts for automated simulations
Conclusions	<ul style="list-style-type: none"> • Questions and course assessment



Numerical simulation of a cracked combustion chamber under thermomechanical fatigue loading

