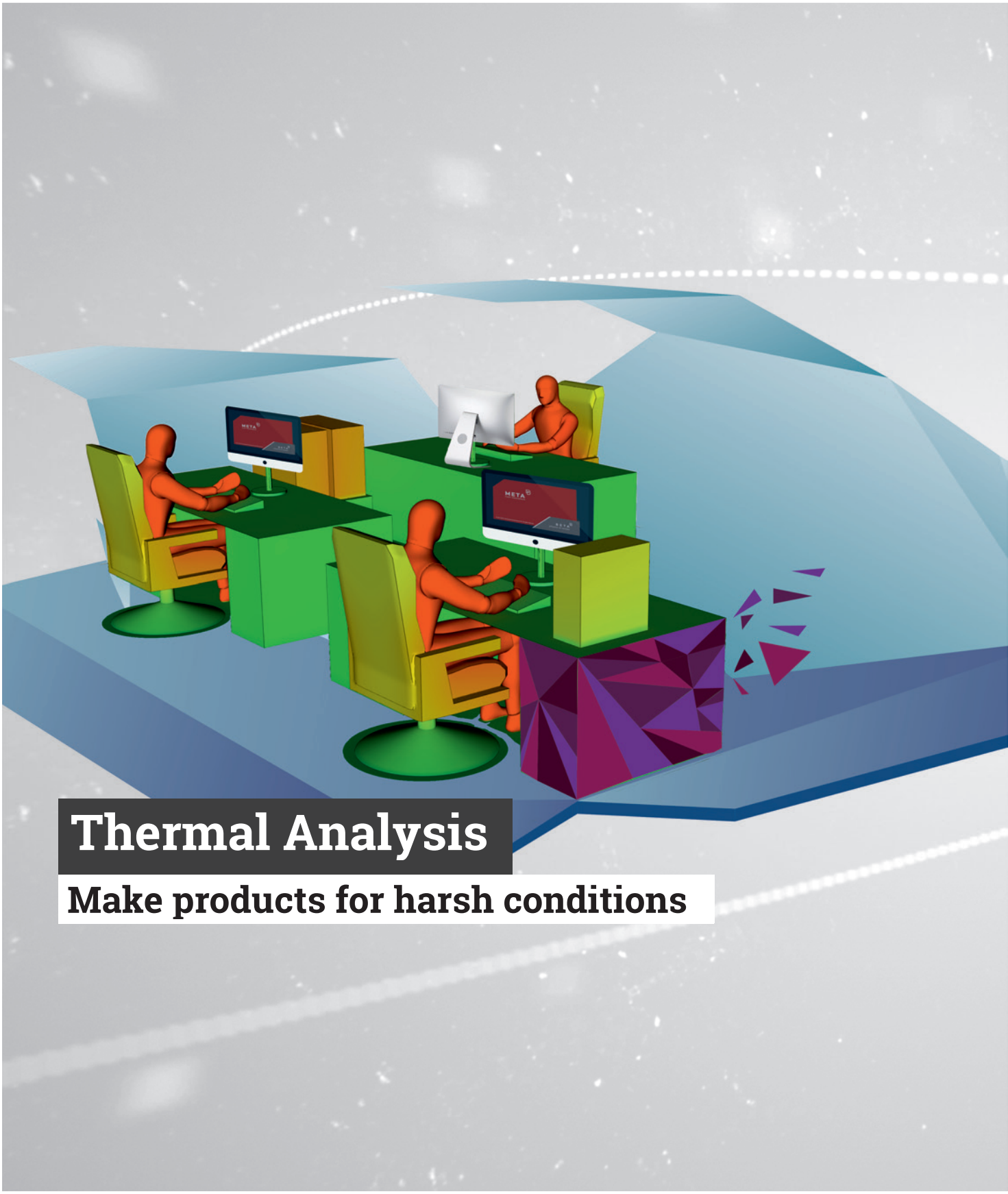
BETA
SIMULATION SOLUTIONS

physics on screen



Thermal Analysis

Make products for harsh conditions

ANSA
PRE PROCESSOR

Tackle the complexity of thermal simulation and set-up your models fast and effectively

ANSA offers pre- processing functionality for Thermal Analyses with TAITherm & THESEUS-FE, addressing industries such as automotive, motorsport, architecture, aerospace, defense, and electronics.

ANSA major features:

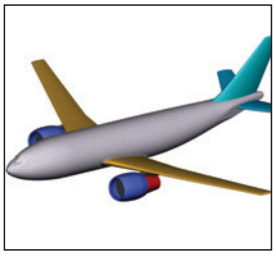
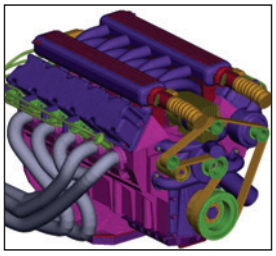
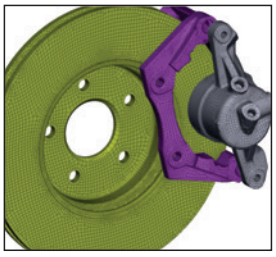
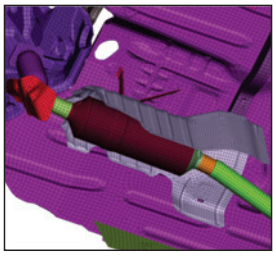
- Multi-core, 64-bit, double-precision for maximum speed, memory access and accuracy.
- Customized GUI for Thermal Management cases.
- Direct I/O of native TAITherm and THESEUS-FE files.
- Interface for TAITherm and THESEUS-FE solvers.
- Geometry cleanup and watertight preparation tools.
- Generation of high quality meshes, (tria & quad elements).
- Batch Mesh tool for meshing automation.
- Surface wrapping for complex geometries.
- Mesh morphing functionalities.

TAITherm Deck notable features

- Materials definition (Fluid, Solid, Anisotropic, Transparent, etc.).
- Thickness and material definition for multi-layer parts.
- Thermal Links (Generic and Face to Face).
- Fluid Stream boundary conditions.
- Assigned and Calculated temperature BCs.
- Environment definition (Natural and Bounding Box options).
- Solver settings (Solution Parameters, Convergence Criteria, Weather files).

THESEUS-FE Deck notable features

- Thermal material properties definition for isotropic and anisotropic materials in NASTRAN format (MAT4, MAT5).
- Thickness and material definition for single layer and multi-layer shell elements (PSHELL, PCOMP).
- Material properties definition for groups of bar elements (PBAR, PBEAM, PCOMP).
- Boundary Conditions for convection radiation & sun position.
- Main solver settings.
- Support of AIRZONE and VOLUME keywords.
- Definition of functions as curves.

Features

- Mesh automation and Quality checks
- Setup of TAITherm Parts
- Definition of TAITherm Thermal Links
- Properties Definition for THESEUS-FE
- Boundary Conditions for THESEUS-FE

Benefits

- Pre-processing integration in a single environment
- Cleanup and CAD functionality
- High quality meshes

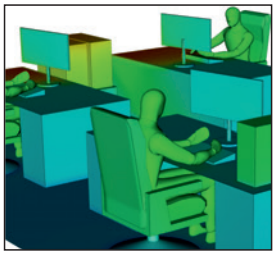
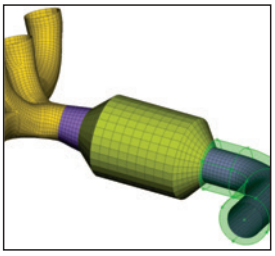
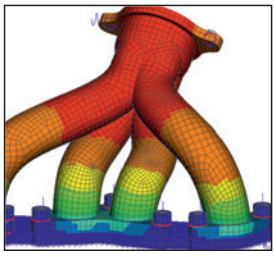
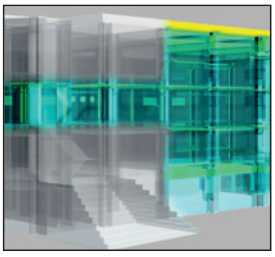
META
POST PROCESSOR

Comprehend the behavior of your products and avoid tedious post–processing tasks

META is an advanced post-processor capable of handling and processing extremely large and complex models, offering outstanding post-processing tools and high performance graphics.

META major features

- Support of all result types and also the calculated normal heat conduction, thermal conductivity, resistance on shells.
- Plot data loading of any solver output, thermal properties on elements and parts, and convergence data.
- Linked manipulation of unsteady element data and all correlating time dependent plots.
- Per layer result handling and reporting of material properties and thicknesses.
- Grouped handling of elements and parts according to Thermal Link connections.
- Comparison between solvers, meshes, models and set-ups.
- Report capabilities (.html, .pptx or .pdf reports).
- Full automation through session files and scripting.

Features

- Results of Thermal properties
- Results comparison
- Advanced Report capabilities
- Post-processing automation
- Volume mesh results

Benefits

- High quality post-processing
- Low memory footprint
- High quality reports

BETA
SIMULATION SOLUTIONS

physics on screen

www.beta-cae.com