

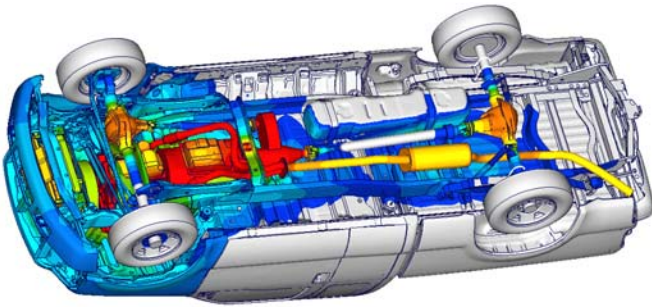


A First Preview to Release 3.0

The upcoming release **THESEUS-FE v3.0** is already announced for November 2008 and wishfully expected by our customers. Therefore we would like to report some more inside information about our latest and actual developments.

■ Solver & GUI for Linux 32/64-bit

enable the THESEUS-FE users to handle realistic models with more than one million finite elements...

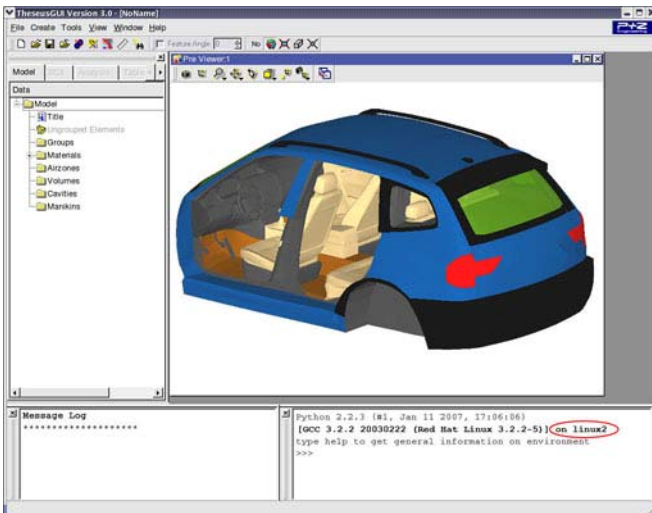


The 32-bit technology can directly address a maximum of 2 GB of memory.

Especially for very detailed radiation models with surface-to-surface view factor storage the 64-bit microprocessor allows our users to address practically unlimited physical memory and handle big-sized models too.

■ Revised GUI

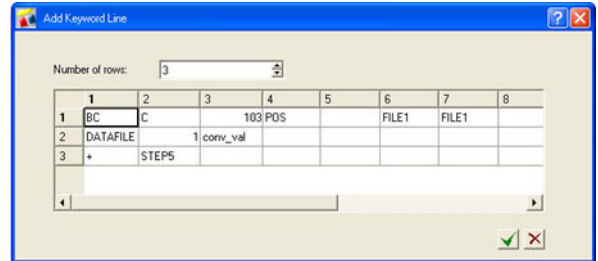
Beside the Graphical User Interface (GUI) for LINUX of course Version 3.0 will also bring up some new extensions and helpful tools to the GUI.



A real improvement and strongly wanted by our customers for material database handling and pre-processing setup will be the new import and export functionality for all kind of customer-specific materials and group boundaries. Self-evident that this functions can also be called via the integrated Python console for automation.



Just as useful will be the new "Add Keywords Ctrl+K" tool integrated in the "Tools" menu, which will assist the user to attach additional keywords easily to the input file of the solver. Particularly made for all special keywords, which are intentionally not supported by any GUI dialogs but by the powerful solver. This simple tool now offers the full flexibility to our users to adapt extreme load cases to their individual needs.



Unfortunately the limited space of the newsletter does not allow to mention all new GUI features in detail.

Nevertheless the following list will try to give you a very short overview about the key enhancements:

- update to multithread safety Open Cascade v6.2.1 library with improved OpenGL visualisation and increased platform compatibility
- decreased memory requirements
- minimum/maximum location of selected results
- more THESEUS-FE Python commands
- find entity and measure tool
- ...



■ Faster Solver

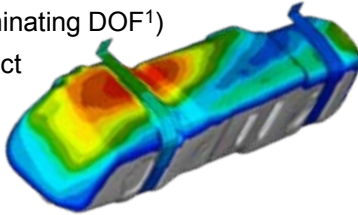
based on optimized algorithms, leads to more than 30% speed up in some cases compared to v2.1.



Extended Contact Features

for 3 dimensional shell elements:

- tied contact (eliminating DOF¹)
- conductive contact
- radiative contact

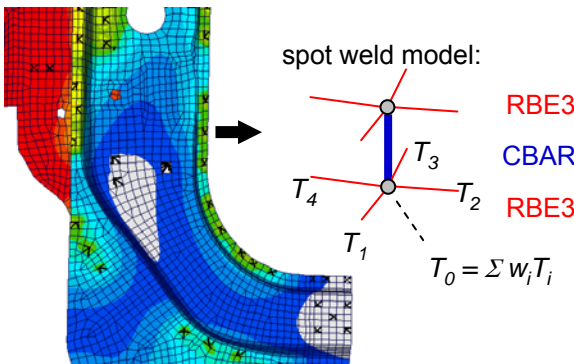


Automatic master-slave assignment within a user-defined search distance is based on fast ray tracing.

New 1D-Finite-Element Types

Our new release will support 1D Nastran elements

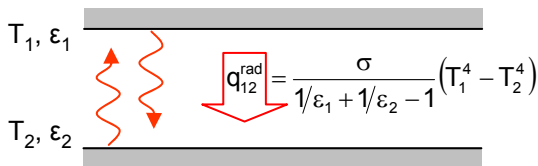
- (e.g. RBE2, RBE3, PBAR, CBAR) dealing with
- spot welds
- joints, bars
- and user-defined multi-point-constraints...



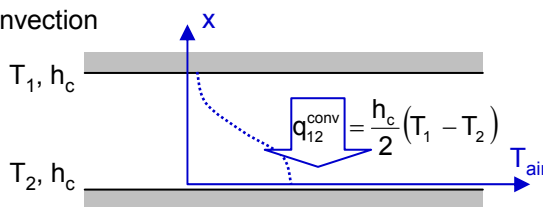
Air/Vacuum Layers

for 3D composite shell elements, considering internal layers that conduct heat without any "airzone" definition via

- surface radiation



- air convection

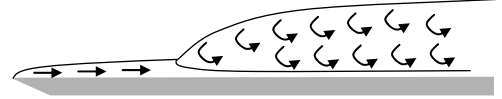


Advanced Convection Laws

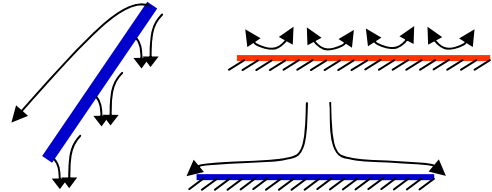
analytic solutions from literature for

- forced convection (laminar/turbulent, plate/tube)

$$Nu_{x,turb} = 0.0296 \cdot Re_x^{4/5} \cdot Pr^{1/3}$$



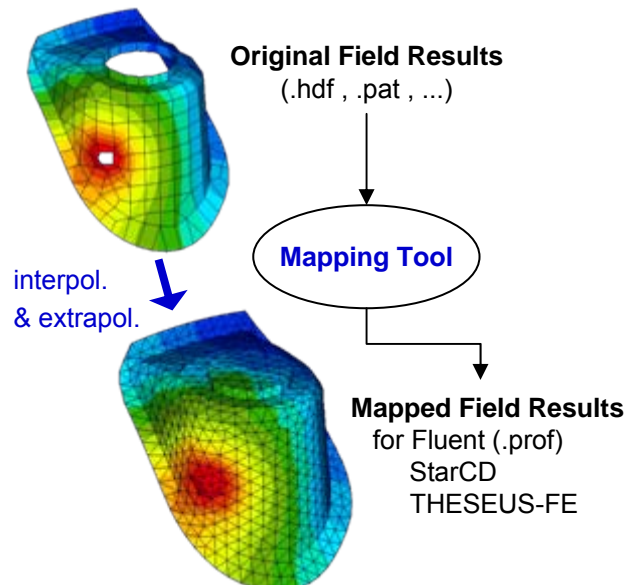
- free convection for the inclined plate



Approaches for the heat transfer coefficient consider characteristic length, air velocity, finite-elm. inclination, gravity field, Reynolds/Rayleigh/Nusselt numbers and temperature dependent air properties.

New Field Result Mapping Tool

The formerly known HDF-Translator² will be replaced by the **TFE-Transformer**, which is also well prepared for a huge number of different data formats. All existing HDF-interfaces have been accelerated and integrated into TFE-Transformer, but furthermore an advanced mapping tool with high speed ray tracing techniques (kd-tree), state-of-the-art interpolation and extrapolation functions is added and completes the capability to transform data between several software applications.



¹ DOF: degree of freedom (temperature node)

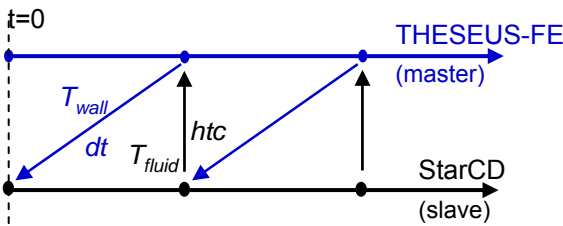
² The HDF-Translator reads in THESEUS-FE hdf-result files and writes out field results files for: Patran, FieldView, EnSight, TecPlot, Hypermesh etc.



THESEUS-FE ↔ STAR-CD

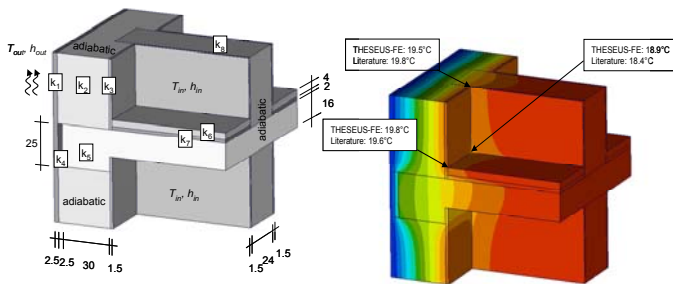
re-engineered robust link now available,

- for fully coupled transient and steady state solutions
- exch. field results: wall temp, fluid temp, HTC, humidity
- well tested user-subroutines for both solvers
- using high speed mapping routines for differing meshes
- adaptive time stepping exchange



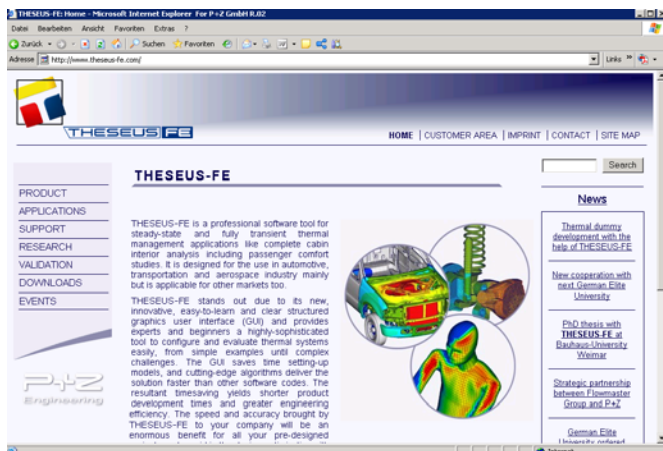
Extended Validation Manual

comparing results for advanced thermodynamic problems from literature with THESEUS-FE results...



You can find a selection of validation results on our...

Revised Homepage www.theseus-fe.com



Registered Trade Marks

THESEUS-FE becomes a registered trade mark in Far East. Beside the European Community the product brand THESEUS-FE passed the international registration process in almost all Asian key markets like Korea, China and for a short time in Japan too. This is an important step for our further sales activities in this upcoming region and a first step against product piracy.

Remaining Events in 2008

Meet our sales and development team at the following local events in Germany ...

VDI's 6. „Wärmemanagement“ conference in Berlin, June 16th and 17th, 2008

32nd FISITA World Automotive Congress in Munich, September 14th - 19th, 2008

14th International Conference on Simulation in Vehicle Engineering (SIMVEC) in Baden-Baden, November 26th and 27th, 2008

SIMVEC accepted P+Z's Paper

The committee of SIMVEC agreed to P+Z's abstract with the title „The Application of Thermal Simulation Techniques for Seat Comfort Optimisations“. The paper about thermal comfort of seats focus on local comfort strategies especially in the contact area and includes humidity aspects and sweating of passengers, which are decisive parameters for ventilated seat design. The work is done in cooperation with the BMW Group.

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