

KULI Postprocessing

3rd KULI User Meeting
17th – 18th Oct 2001

KULI Postprocessing

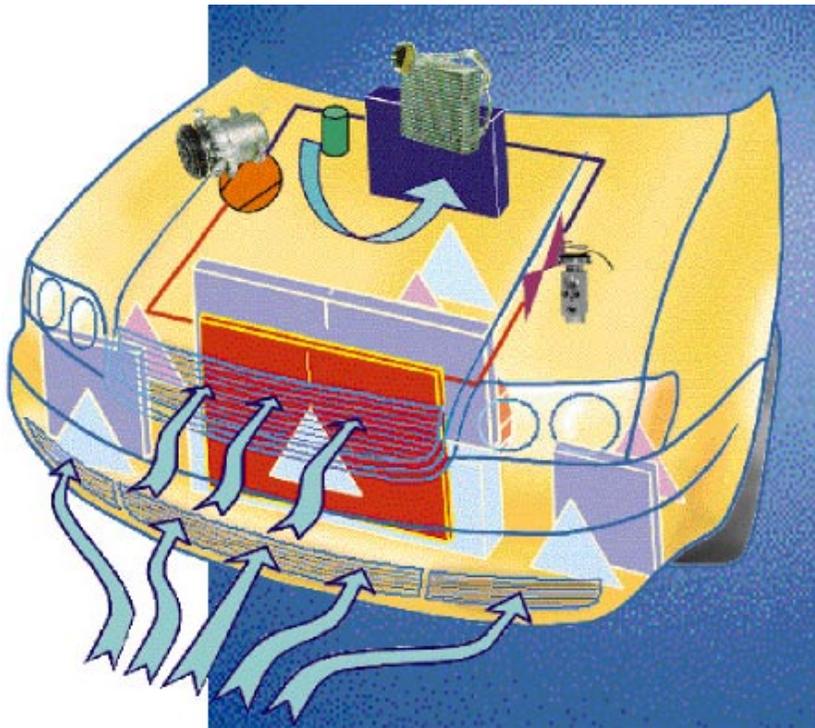
H. Heizeneder, ECS, Steyr

Why postprocessing?

- Large amount of simulation output
(i.e. transient simulation, complex models)
- Focus only on necessary information
- Reports normally difficult to reproduce
- Uniform reports
- Evaluation time is Development time
(mostly too much)
- Graphical interpretation of results

Main features

Analysis and Reporting



- ☒ Simulation results in tables
- ☒ Easy data selection
- ☒ Quick variant comparison
- ☒ Simply bar and line charts
- ☒ Operation points of radiators and fans in 2D/3D
- ☒ 3D graphs of heat and velocity distribution
- ☒ Automatic report generation

KULI Postprocessing

Data filter

ExTRUCK

- Y: System
 - Y: Allgemeines
 - Y: Simulationsparameter
 - Y: 1. Wasserkühler
 - Y: Zeige Komponentenkennung
 - Y: Zeige Bemerkung (Simulation)
 - Y: Zeige Dateiname
 - N: Zeige Bemerkung
 - Y: Zeige Breite [mm]
 - Y: Zeige Höhe [mm]
 - Y: Zeige Tiefe [mm]
 - N: Zeige x-Koordinate [mm]
 - N: Zeige y-Koordinate [mm]
 - N: Zeige z-Koordinate [mm]
 - Y: Zeige Eintrittstempera
 - Y: Zeige Austrittstempera
 - N: Zeige Temperaturdiff
 - Y: Zeige Eintrittstempera
 - Y: Zeige Austrittstempera

Variant comparison

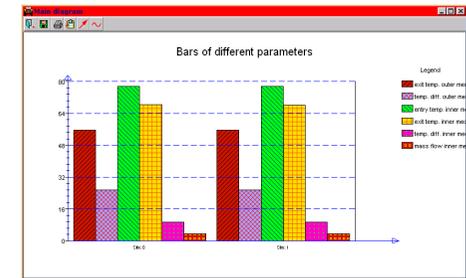
1. Tube

C:\Programs\Kuli_5\Examples PP\Result

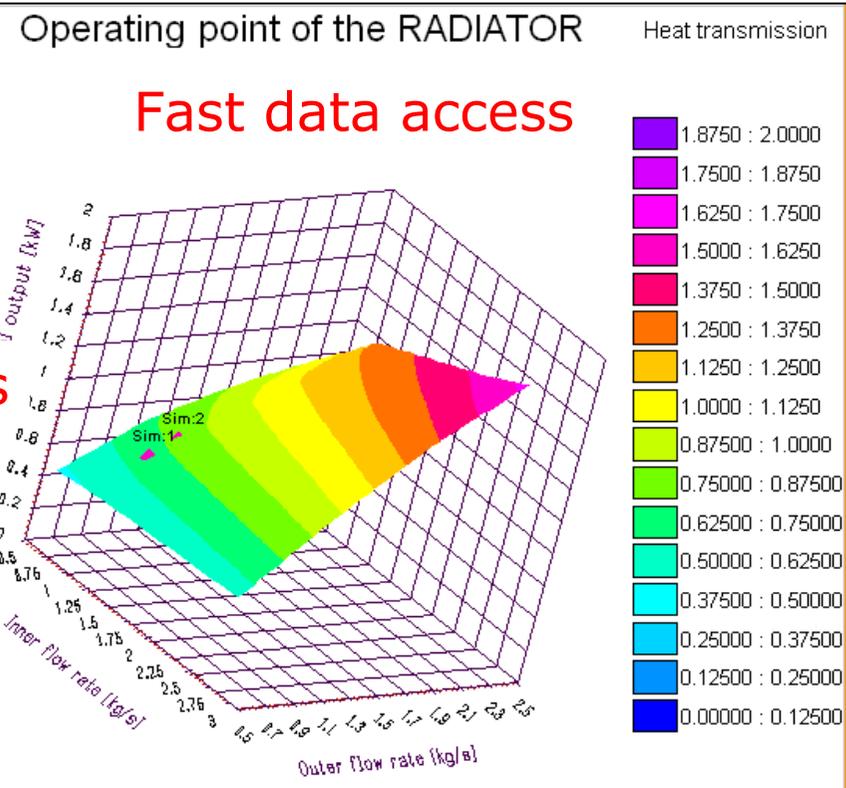
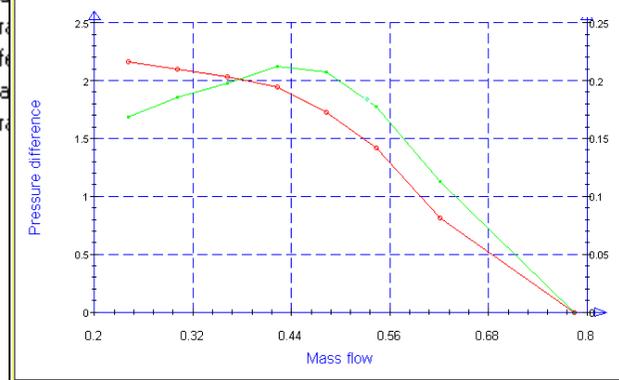
Sim: 1

1. TUB

- Code of component
- Comment (simulation)
- Comment
- Type
- Entry vapour quantity [-]
- Exit vapour quantity [-]
- Entry enthalpy [kJ/kg]
- Exit enthalpy [kJ/kg]
- Entry pressure [bar]
- Exit pressure [bar]
- Pressure difference [bar]
- Mass flow [kg/s]



Userdefined units



„Be effective at work“

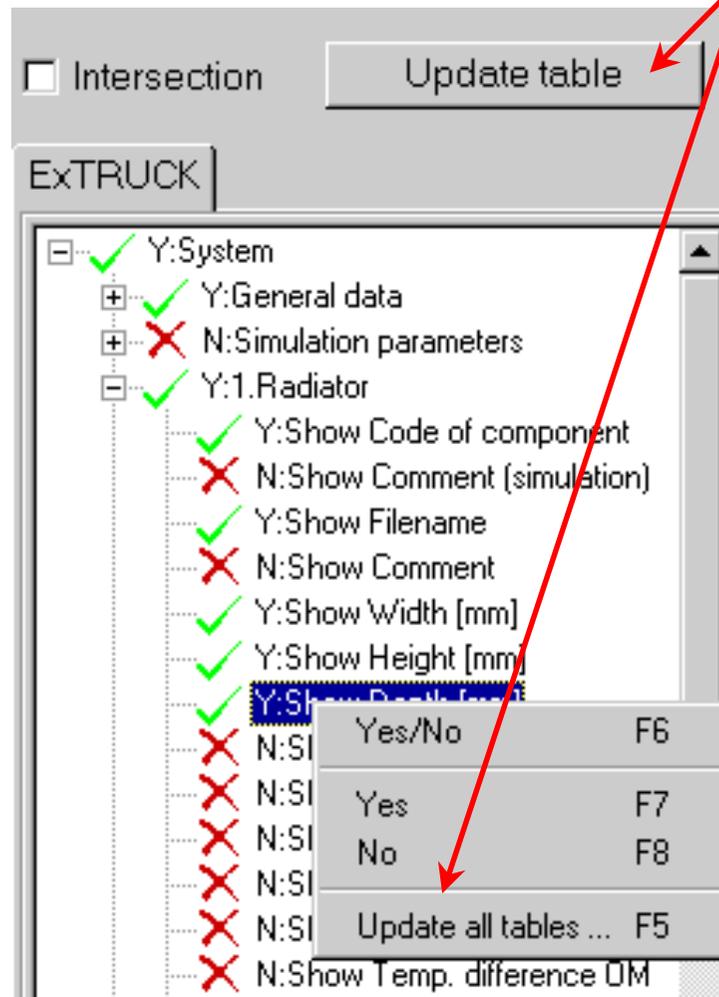
How to perform:

- **Ex.1 – Create tables generally**
- **Ex.2 – Create diagrams generally**
- **Ex.3 – Generate a full report**
- **Ex.4 – Use stored settings**

[See demo](#)

Ex. 1 & 2 – Create Tables and Diagrams

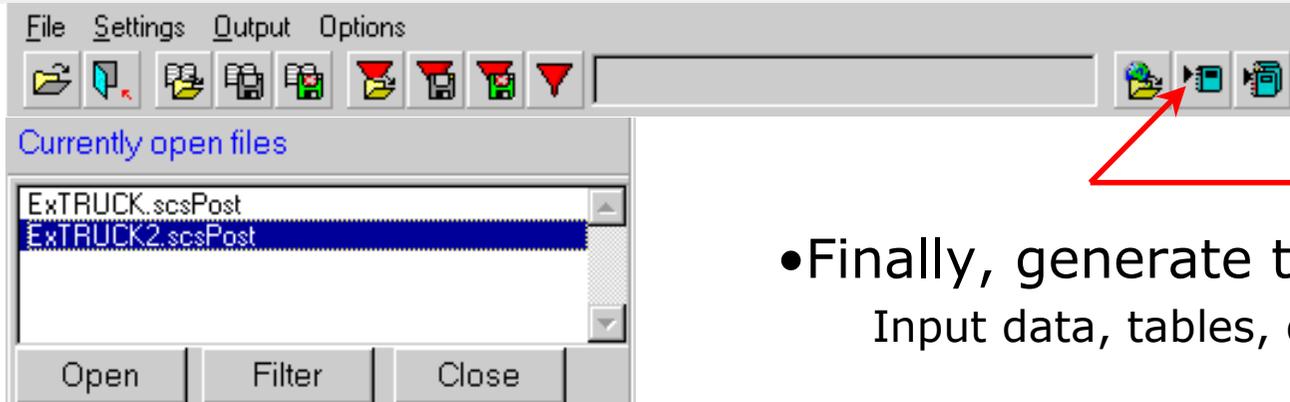
Update content of table



- Orientation by tree
- Get your selection in the tree structure
- Transfer the selection into tables
- Difference: component + parts
- Adjust your view (top/bottom table)

[See demo](#)

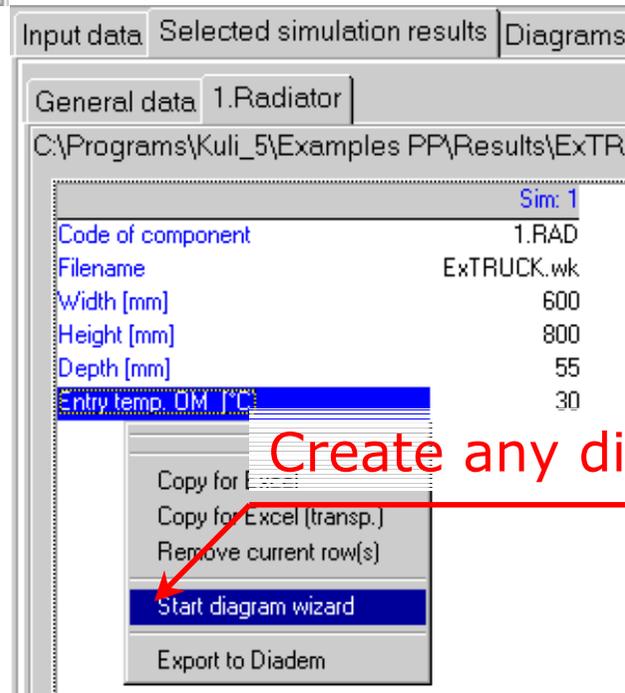
Ex. 3 – Generate a complete Report



Make new report

- Finally, generate the full report with Input data, tables, diagrams and graphics

- Create Tables
- Create Diagrams
 - Start wizard from any table



Create any diagram

See demo

Ex. 4 – Use Settings – Save time!



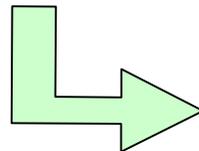
Handle here

Apply this Setting more times

One **setting** contains:

- + Exakt selection of data (in tree)
- + Tables with all simulation results
- + Created diagram collection

System variants, serie of result files



**Open file, Apply Setting
and Make report. Ready!**

[See demo](#)

„Take advantage of further functions“

How to perform:

- **Ex.5 – Use stored sessions**
- **Ex.6 – Units defined by user**
- **Ex.7 – Open with filter (transient sim.)**
- **Ex.8 – Comparison of model variants**

[See demo](#)

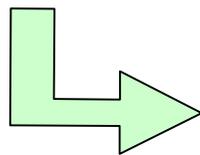
Ex. 6 – Userdefined output units

Sim: 1	
Entry pressure [hPa]	1013
Exit pressure [hPa]	1013.12
Pressure difference [Pa]	12
Temperature [°C]	0
Velocity [m/s]	3.82106
Volume flow [m ³ /s]	3.82106

International reporting:

- ✓ Units change for different reports
- ✓ Options determine used units
- ✓ Easy change to your units
- ✓ Units in diagrams, too

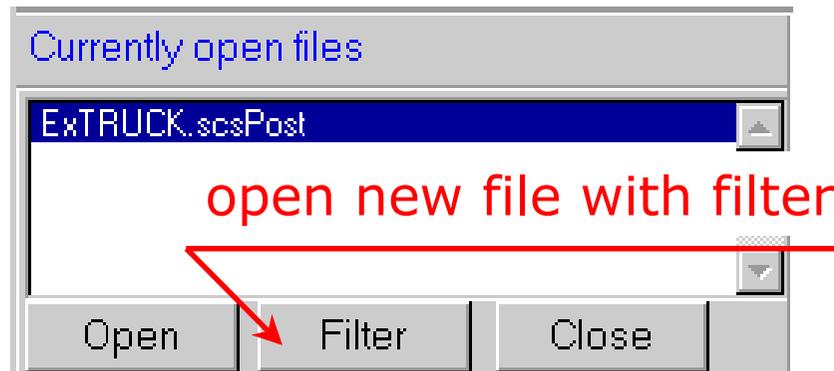
Use userdefined output units



Report for different countries
Report for different clients

[See demo](#)

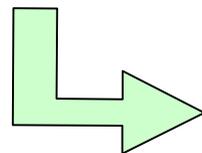
Ex. 7 – Open with filter (transient sim.)



Evaluation gets faster:

- Selection of data before opening file
- Tables don't get overfull
- Good performance despite of large files

Apply filter before opening



Amount of data decreases!

[See demo](#)

Ex. 8 – Comparison of model variants

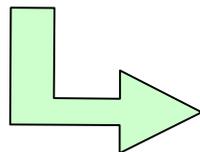
1.Radiator	
C:\TEMP\ExTRUCK.scsPost	
Sim: 1	
Code of component	1.RAD
Entry temp. IM [°C]	78.2179
Exit temp. IM [°C]	68.9246
Amount of heat IM [kW]	119.547

C:\TEMP\ExTRUCK2.scsPost	
Sim: 1	
Code of component	1.RAD
Entry temp. IM [°C]	52.6544
Exit temp. IM [°C]	43.1846
Amount of heat IM [kW]	119.314

Detailed analysis can be performed:

- + Load all variant files
- + Selection only one time
(set option intersection)
- + Variant comparison in tables
- + Synchronous scrolling
(esp. for large tables)

Select only few values



Differences well shown

See demo

Outlook – What does the future bring?

Thinking at
next meeting!



- **Diagrams for Comparison of**
 - Components of different simulations
 - Simulation result / Measured data
- **Diagram tuning for report**
 - Vertical/horizontal lines (markers)
 - Draw Points: i.e. P (40 min/102,34 °C)
 - Individual formatting (textbox, curves)
- **Reports including full comparison**
- **Of course, what our clients need.**

Further **impressions**, **questions** and **wishes:**

- Ask **now** referring KULI Postprocessor
- Visit our homepage <http://www.kuli.at>
- Come to our workshop tomorrow (9 am)

Bye