

PERMAS

The Finite Element solver



**Fast *Contact* Analysis with
Large *Assembly* Models**



Motor Calculation Porsche 718 Cayman GT4

- Contacts
- Bolts pretension
- Non - linear gaskets
- Temperature dependence

131 000 000 **DOFs**
44 000 000 **Nodes**
37 000 000 **Elements**
170 000 Contact-DOFs
39 000 **Gaskets**

29 **Time steps**
2 **Temperature
states**



Courtesy of
Porsche AG,
Stuttgart, Germany

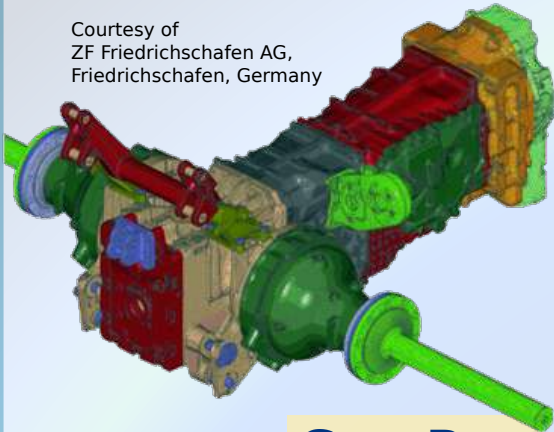
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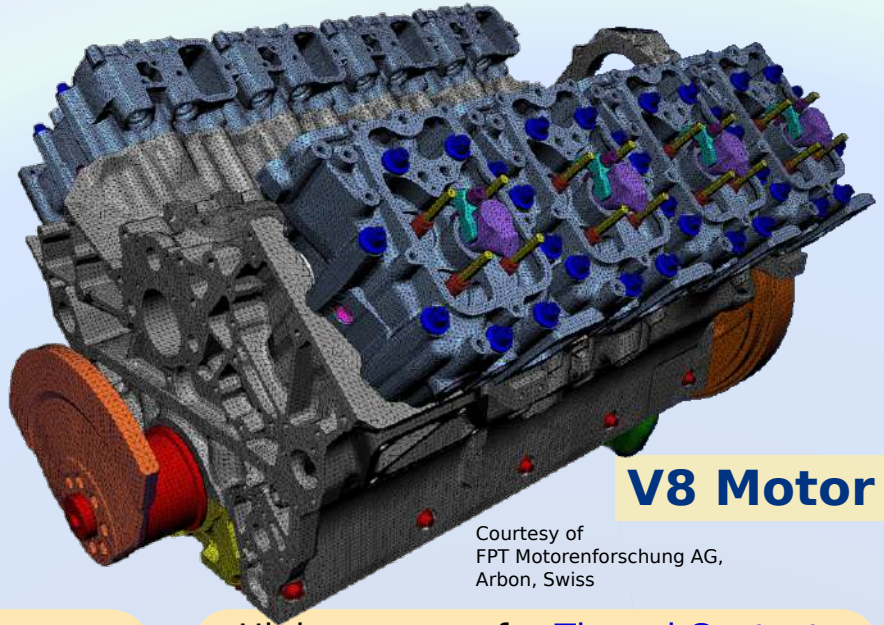


Bolted Assembly Models ***Efficient Contact Analysis***

Courtesy of
ZF Friedrichschafen AG,
Friedrichschafen, Germany



GearBox

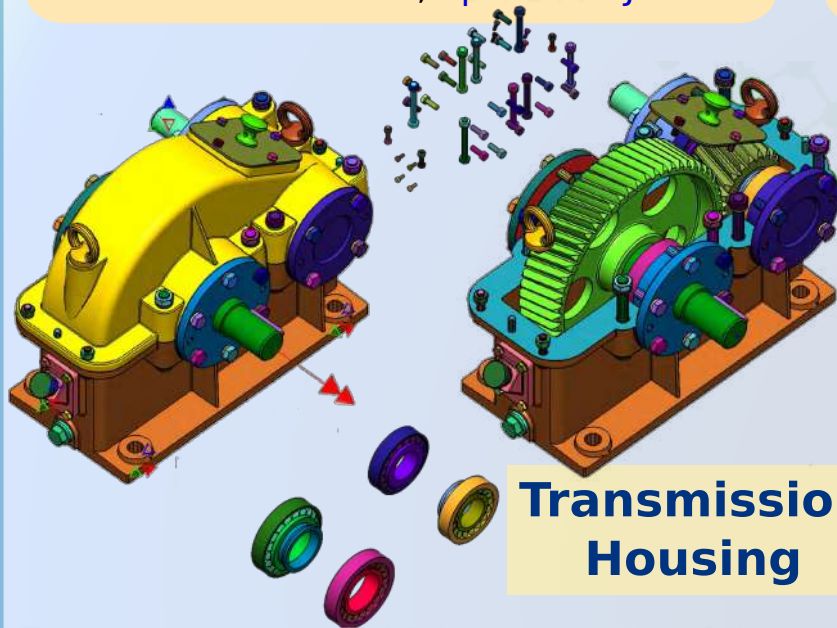


V8 Motor

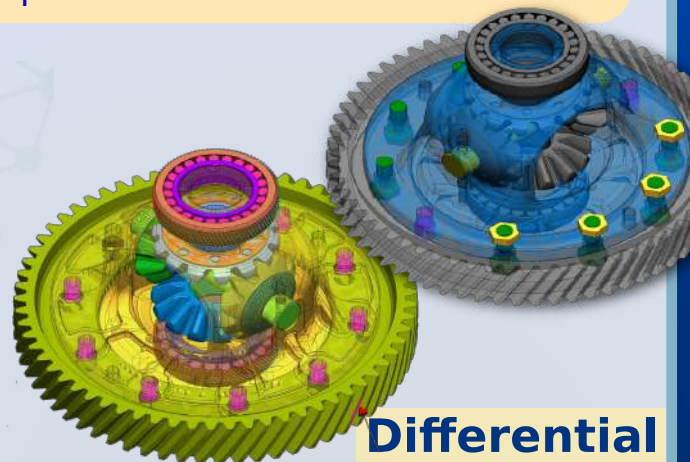
Courtesy of
FPT Motorenforschung AG,
Arbon, Swiss

- Complex Assemblies
- Bolt Modeling / Pretensioning
- Non-Linear Gaskets, Spot Weld Joints ...

- High accuracy for Thread Contact
- Subsequent Dynamics Analysis
- Optimization with Contacts



Transmission Housing



Differential Housing

"Making realistic simulations practical"

For more information about
contact simulation with
PERMAS, visit our website
www.intes.fr
or send us an email at
point-contact@intes.fr

