

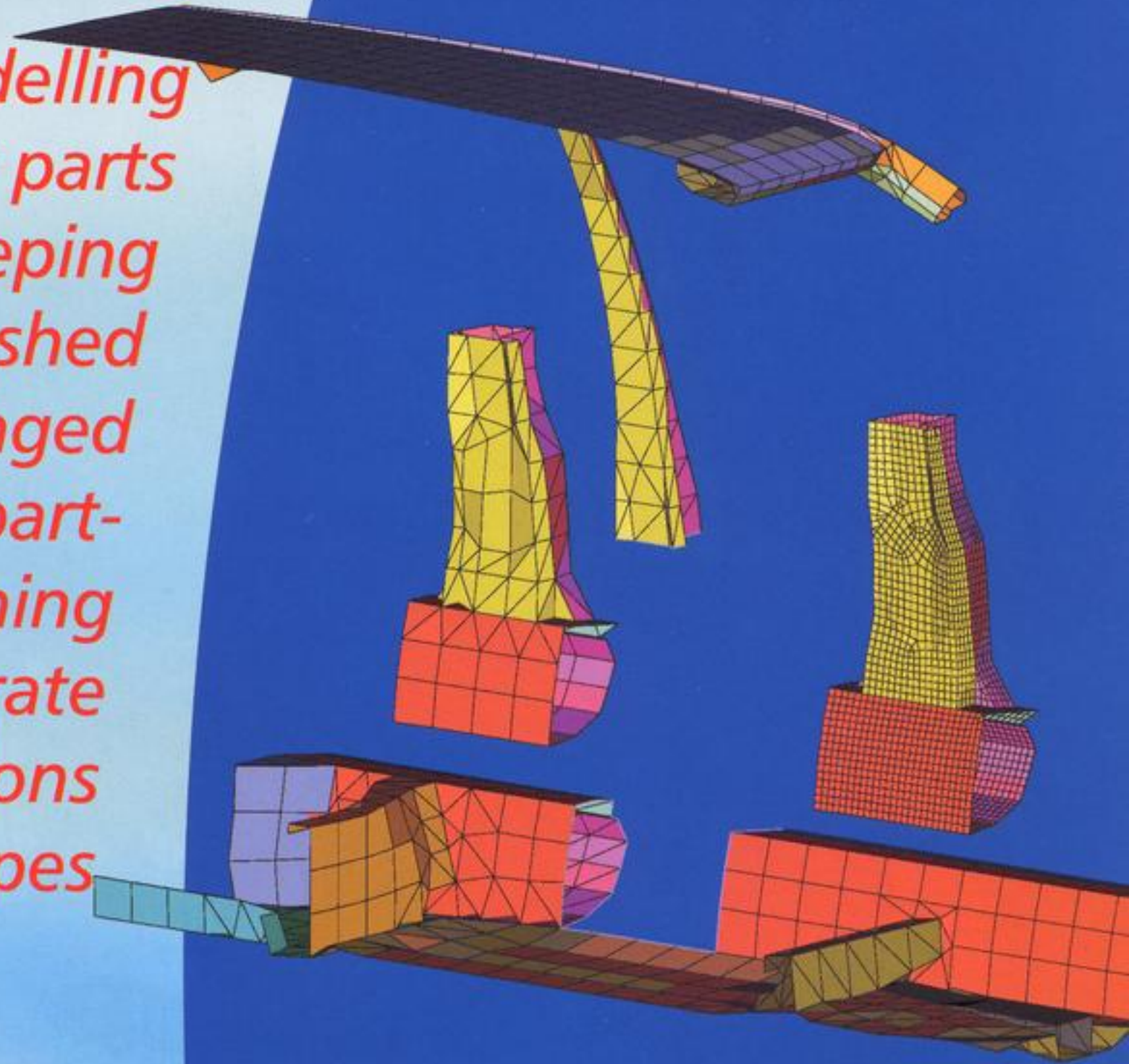
PERMAS

Automated Part Coupling



*Raising productivity in
finite element modelling:*

- *mesh-independent modelling
of complex parts*
- *faster exchange of parts by keeping
other already meshed
parts unchanged*
- *more flexible modelling by part-
oriented meshing*
- *improved mesh quality by accurate
mesh transitions*
- *applicable for all analysis types*

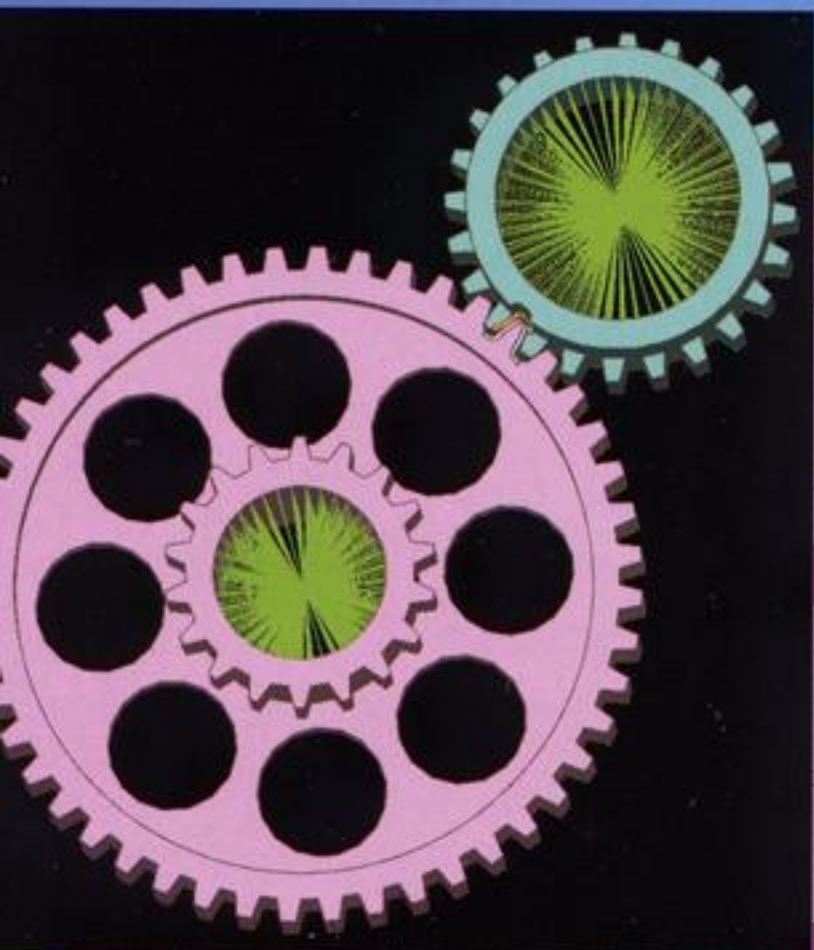


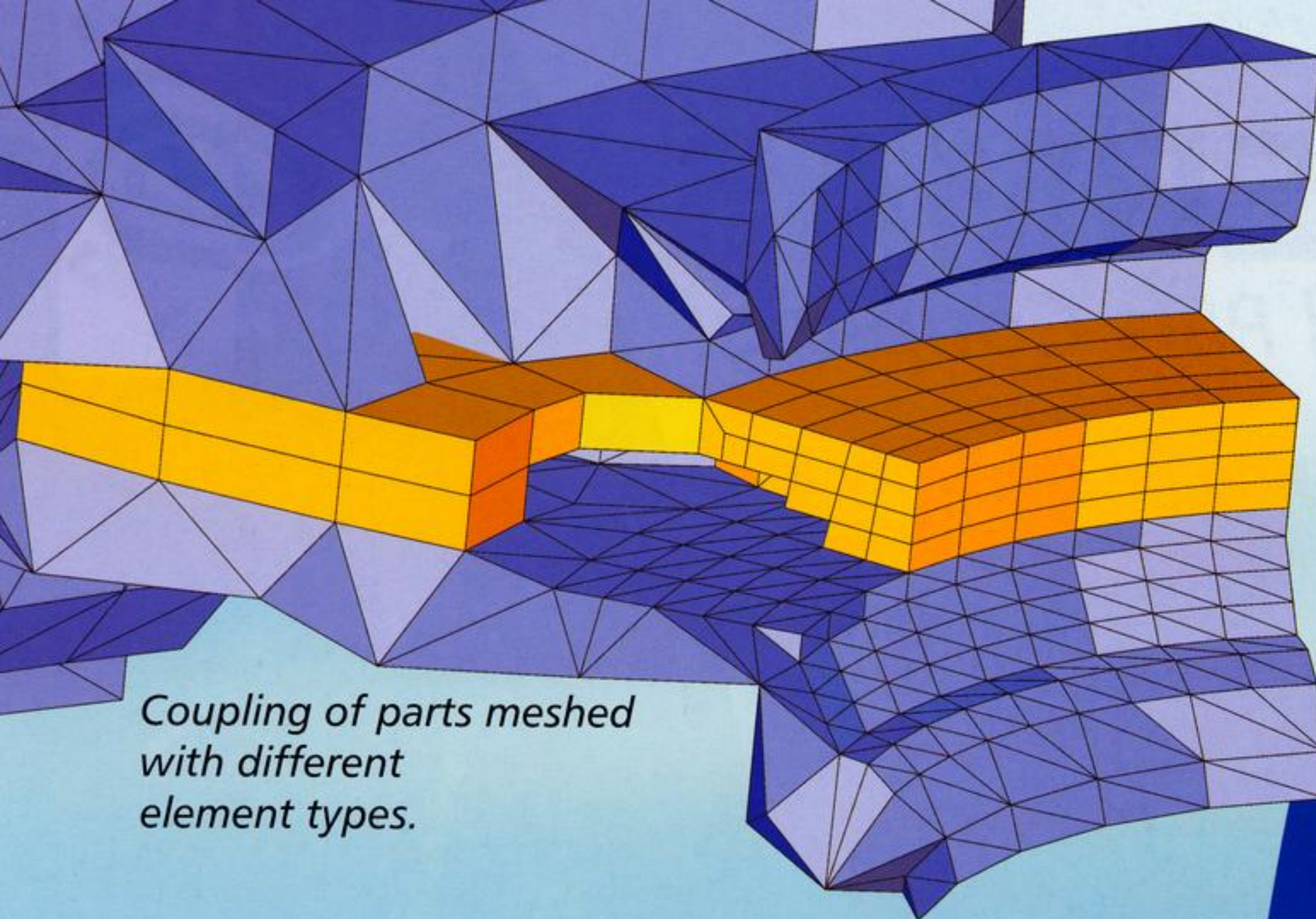
*Local mesh refinement for more
accurate results.*



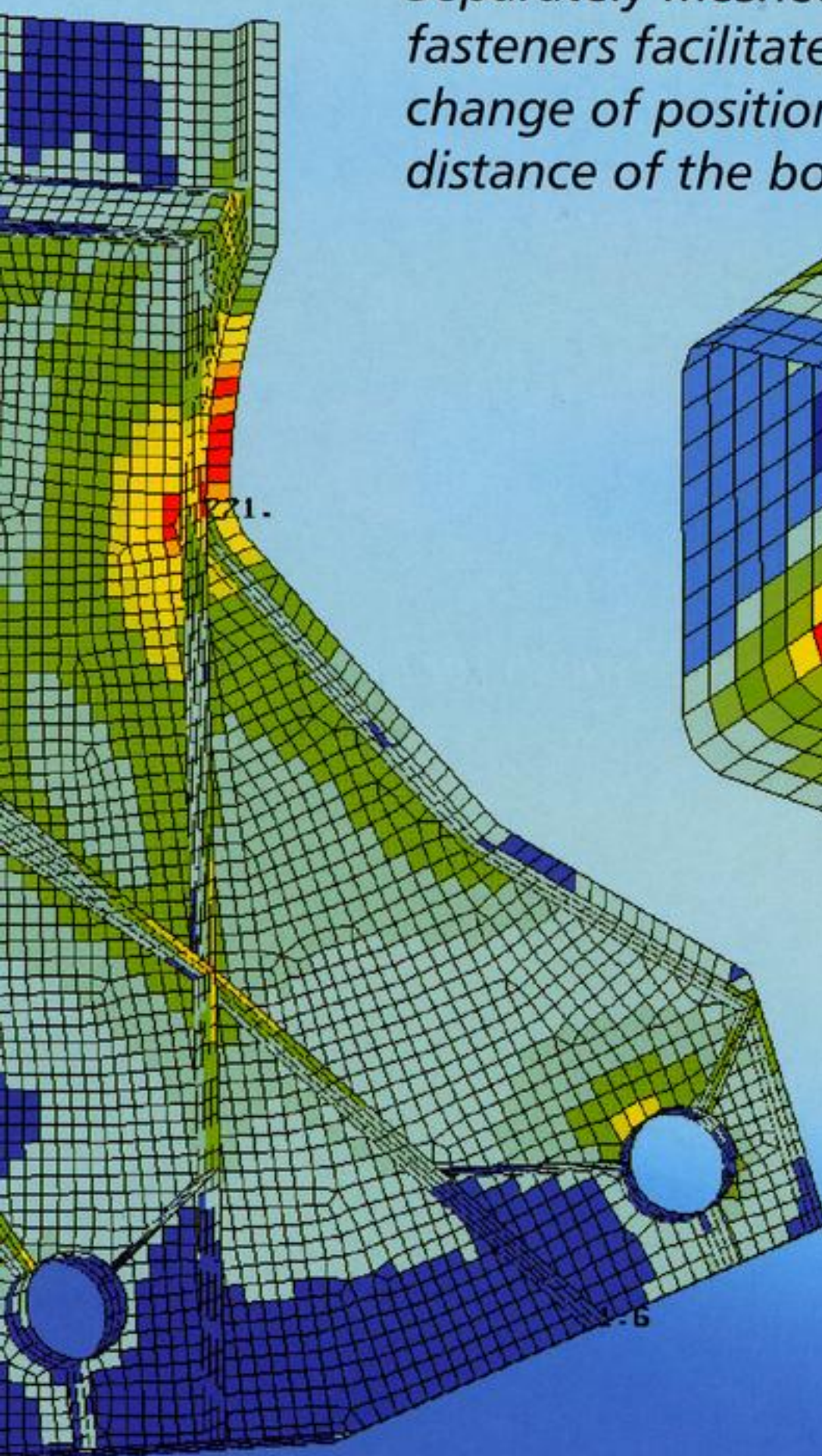
*Automated generation of
spotweld elements and their
coupling with incompatibly
meshed flanges.*

*Contact analysis with local
mesh refinement: Accurate
results at face and root of a
gear tooth, in combination
with moderate model size
(by courtesy of Renault
Sports).*

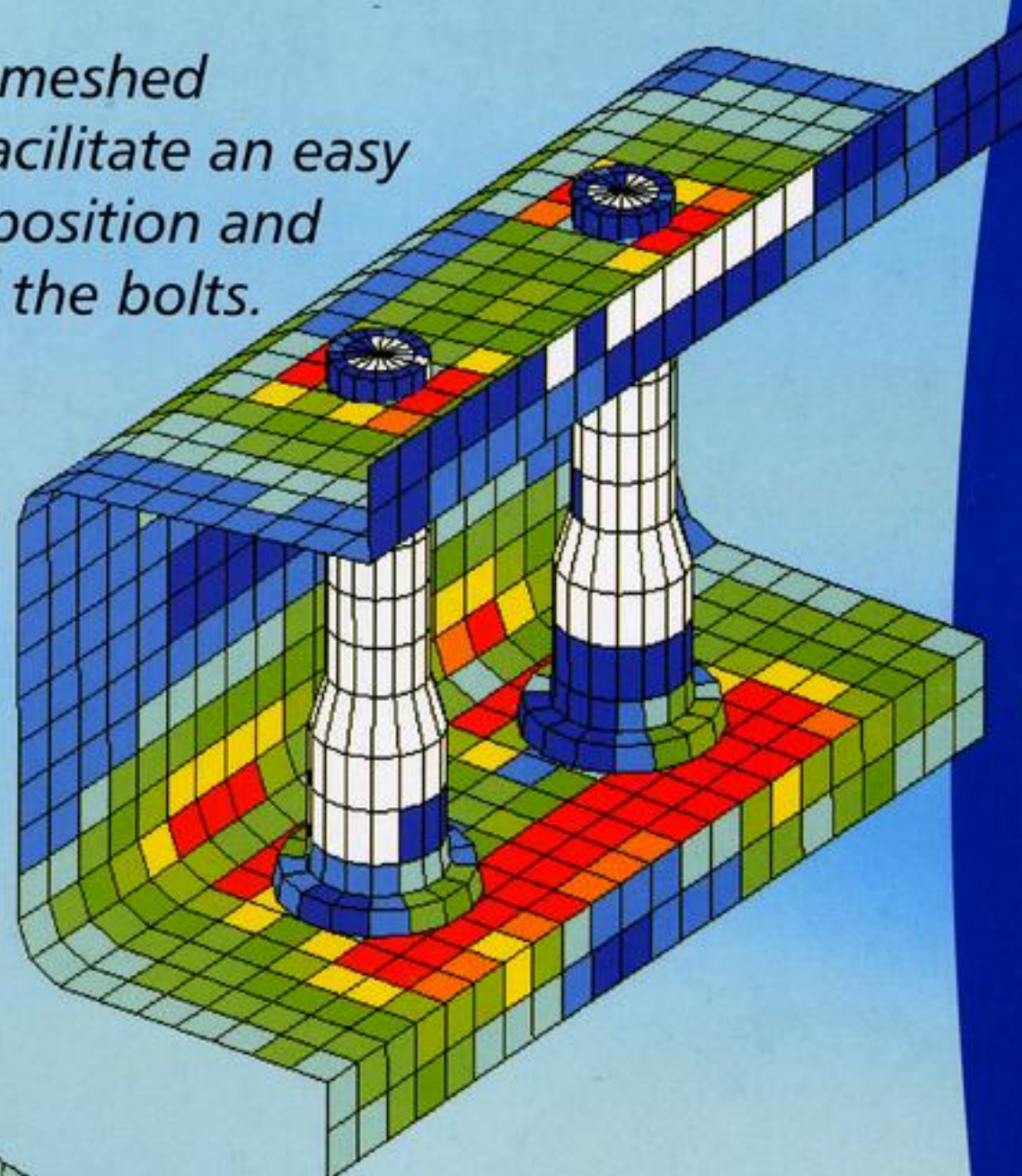




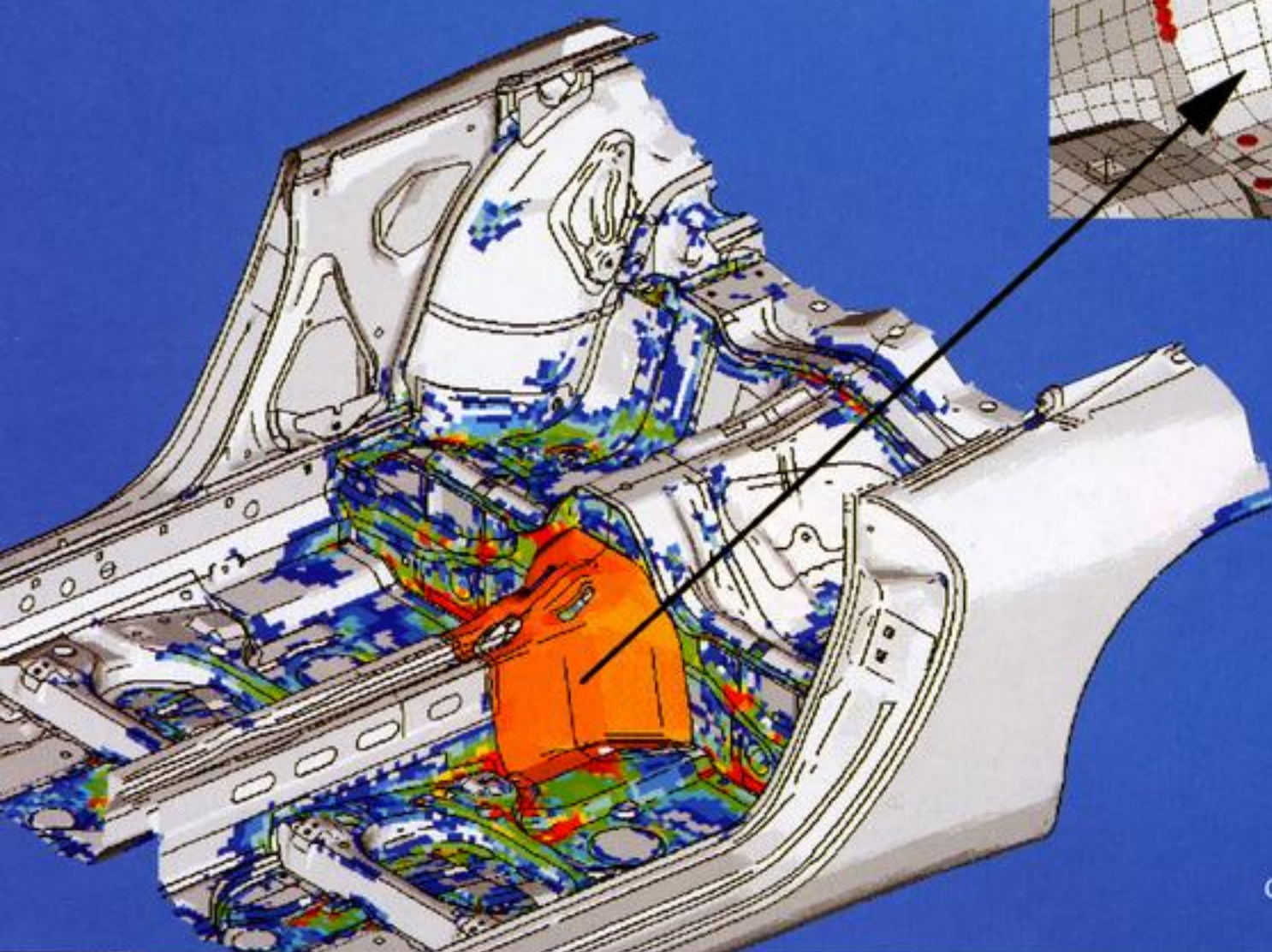
Coupling of parts meshed with different element types.



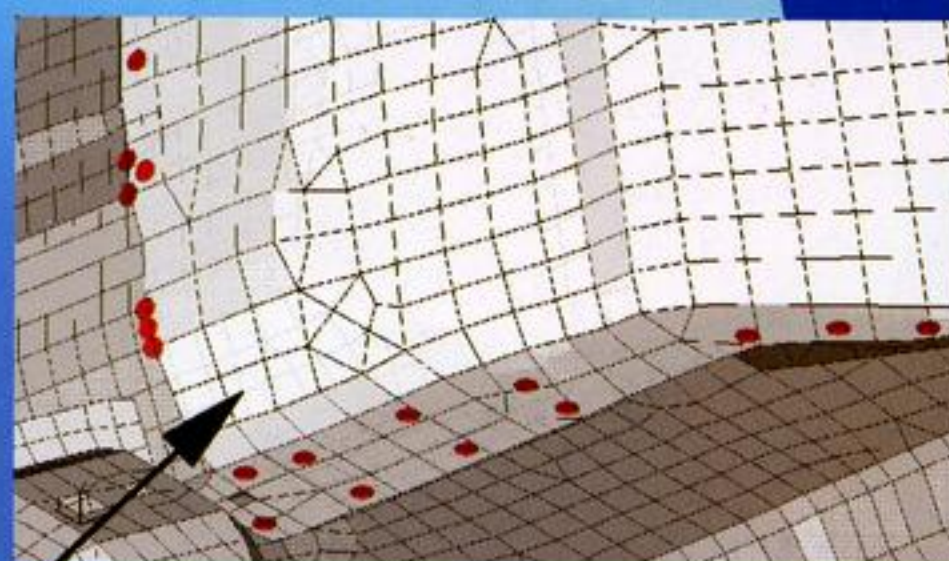
Separately meshed fasteners facilitate an easy change of position and distance of the bolts.



Separately meshed ribs facilitate an easy change of position and orientation of the ribs.



Easy exchange of parts using spotweld connections.



In the pre-processor, the user specifies

- surfaces,
- spotwelds,
- contact properties.

PERMAS automatically performs

- neighbourhood search,
- kinematic connection of the parts,
- contact analysis.

For verification and evaluation, PERMAS provides

- characteristics of the coupling (like distance and normal vectors),
- coupling forces, spotweld forces,
- contact forces, gap widths, etc..

For more information on PERMAS contact

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