

Rapid Hex Mesh for Tyre Modeling

Highly automated rapid 100% Hex Mesh & hex dominant mesh modeling for tire tread and full tire models.

Challenges in Concept Studies

Tire treads are made with grooves & rib features with different height and width, due to which building hex mesh is a challenging task along with the need of matched nodes at the interfacing segments, which takes several hours to model and requires expertise in modeling.

The Solution

The rapid tire hex meshing tool from MeshWorks makes this task automated and easy to execute. MeshWorks enables rapid hex mesh modeling with a high level of automation. It can generate a good quality mesh, with minimal user inputs, and the task can be performed by any engineer, and doesn't require a meshing expert.

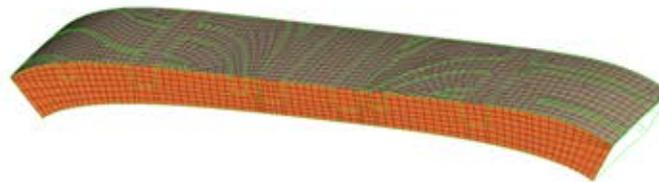
Value

	Process using Other Tools	Process using DEP MeshWorks
Time taken for the task	3 Days	1 Hour
Expertise Needed	Highly experienced engineer	Regular engineer
Auto parameterization of features for further optimization	None	Excellent

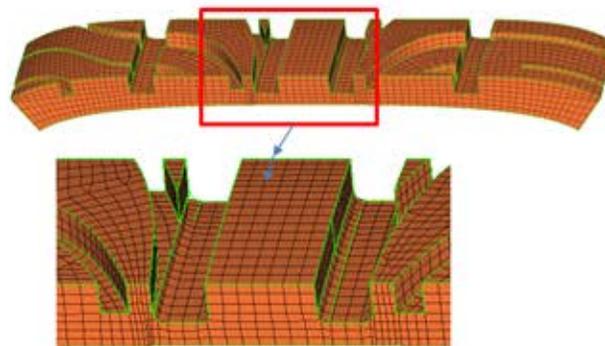
Tyre Tread - CAD Data



Tyre Tread - Quad Dominated Mesh



Tyre Tread - Hex Dominated Mesh



Complete Pre & Post Processor

- Comprehensive FE/CFD pre & post processor with powerful tools for CAD clean-up, meshing (shell, tetra, hexa, hybrid, etc.), highly automated model assembly and results processing.
- Complex FE/CFD can be generated 30% faster and with better quality than other competitor products.

Customized Engineering Process Automation

- Customer CAE processes can be rapidly automated using a fast Record>Create-GUI>Plumb>Publish process.
- 2X to 10X time reduction can be expected for processes that are repeatable.

CAD & CAE Morphing Technology

- Reduces Finite Element (FE) & Computational Fluid Dynamics (CFD) model building time by 50% to 80%.
- Generated morphed CAD models representing optimized designs very rapidly and form the main link between CAE & Design teams.

Parametric CAE Technology

- Rapidly converts FE & CFD models to intelligent parametric CAE models, enabling fast design iterations & Design of Experiment (DoE) studies.
- Most comprehensive parametrization engine addressing several categories of parameters such as shape, gage, material, spot welds, seam welds, adhesives, design features, etc.

Parametric CAE Technology

- Enables Multi-Disciplinary Optimization to meet design targets, minimize product weight, and minimize manufacturing cost using parametric CAE models.

