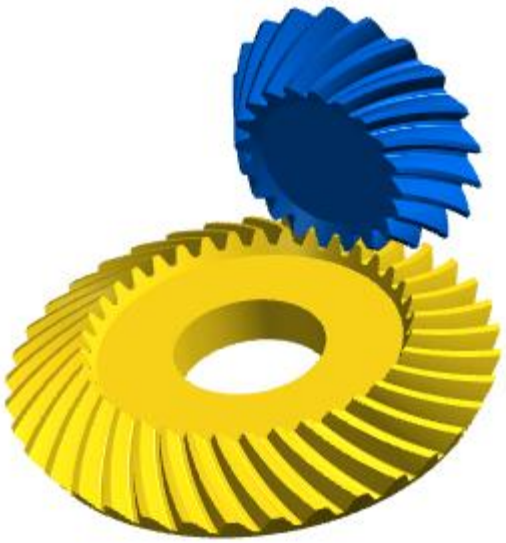
KISSsoft
Drivetrain Design Solutions

KISSsoft Special Training

Bevel and Hypoid Gears

2 days



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Sharing Knowledge

Bevel and Hypoid Gears

This 2-day special training covers the theory for bevel and hypoid gears added with practical exercises.

In the first part, several conventional cutting methods are shown which are used for straight, helical and spiral bevel gears. Further, the determination of the geometry is explained for bevel gears, as it is defined in ISO 23509, and the specialities of hypoid gears are shown.

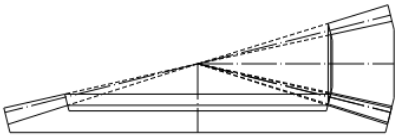
In the second part, the topics strength, sizing, analysis and optimization are explained for bevel and hypoid gears. Using the contact analysis, the contact pattern and stresses are calculated and optimized as well as EPG displacements determined and applied.

Finally, the generation of 3D models with modifications will be explained and the process from generation until export is shown.

The target group are engineers working with bevel gears in design and manufacturing. Participants are recommended to have completed an advanced training on gear calculation and are familiar with the KISSsoft user interface. Upon interest, a 30-day test license can be provided prior to the training.

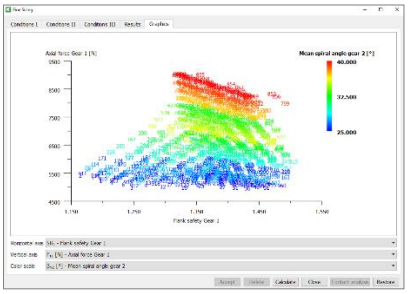
Topics Day 1

Cutting method and geometry



- Cutting methods for straight and helical bevel gears
- Cutting methods Face Hobbing und Face Milling and its specialties
- Different cone types for bevel and hypoid gears
- Calculation of geometry, virtual cylindrical gear

Strength rating



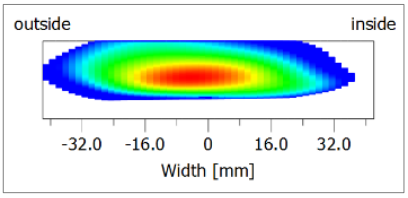
- Calculation of strength, different standards
- Scuffing according to ISO/DTS 10300-20
- Flank fracture according to ISO/DTR 19042

Topics Day 2

Design of bevel gears

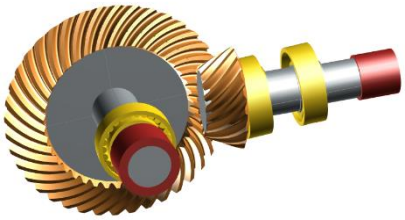
- Rough sizing, relevant parameters
- Fine sizing, optimization of bevel and hypoid gears
- Microgeometry

Contact analysis



- Determination of EPG displacement with KISSsys
- Contact analysis of bevel gears
- Contact pattern, transmission error
- Optimization using gear modifications

Processes



- Design processes with conventional manufacturing (GEMS®) and 5-Axis milling
- Generating 3D models, check of contact pattern (contact lines)
- Topological modification