

Fatigue Analysis

winLIFE is a powerful Windows native program. It is easy to use and required the understanding of fatigue theory.

winLIFE has been used for 25 years in the following areas: Automotive, Aerospace, Military Vehicles, Wind Energy Systems, Civil Engineering, Mining Machinery, Ship Industry, Machinery Industry, Universities.

There are some modules to cover nearly all of the problems which can occur in fatigue.

winLIFE BASIC

Fatigue Calculation according to Nominal Stress, Local Stress, Local Strain Approach.

- Interaction with existing FE-and MBS-Codes (FEMAP, NX NASTRAN, ANSYS, ABAQUS, RecurDyn, ...)
- S-N-Curve Generator / e-N-Curve Generator (FKM-Guideline, UML, Hück, GL, Haibach)
- Material Database with more than thousand material data
- Measured Loading Histories can be used, no limit in length, powerful visual Data Correction Tools
- Load spectrum generator available
- Powerful visual Analysis Tools
- Super positioning results (weighted sum of different Load Cases)
- Report generator enables standard and user-defined Reports

winLIFE MULTIAXIAL

Fatigue Estimation using the Critical Plane Approach.

- Many Damage Hypothesis in the plane can be used
- Up to 200 parallel Loadings can be used synchronously
- Strain Gage Data readable directly from any gage
- Powerful visual Analysis of Data for every Node and Plane
- Fast and effective algorithm to reduce Calculation time

winLIFE VIEWER4WINLIFE

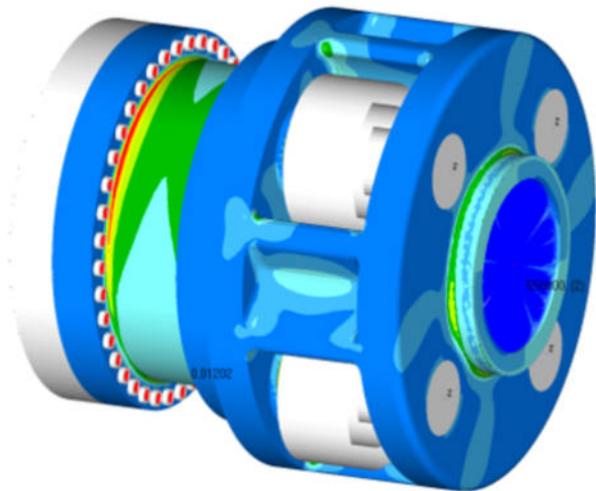
- Direct access to ANSYS, ABAQUS and NSTRAN OP2 result files.
- Graphical representation of FEA results (stress and strain) and fatigue results within winLIFE.
- High speed input of huge databases.

winLIFE FKM QUICKCHECK

- Static and endurance proof according to FKM-Guideline
- Worst-case analysis for load spectra combinations with constant stress ratio to find the most endangered point for all nodes of the surface.
- Very simple to use!

winLIFE RANDOM

- Fatigue calculation based on PSD results from FEA respective MBS simulations. In aerospace, ship, military and automotive industry this is an established method
- Customers who have to meet fatigue tests in the certification process on random-test-rigs use it successfully.



Worldwide Main References

Andritz Hydro, Borg Warner, Bosch, Daimler, Doosan, FAG, Hitachi, Hyundai Heavy Ind., Komatsu, Hanomag, MAIT, MAN, MAK, Mitsubishi, Krauss Maffei Wegmann, Lürssen Werft, LBF, Pfeleiderer Verkehrstechnik, Porsche, Rheinmetall Landsysteme, TEMIC, Thyssen, Voith, Zeppelin, ZF.

winLIFE is developed by Steinbeis Transfer
Center New Technologies in Traffic Engineering
www.stz-verkehr.de



201901

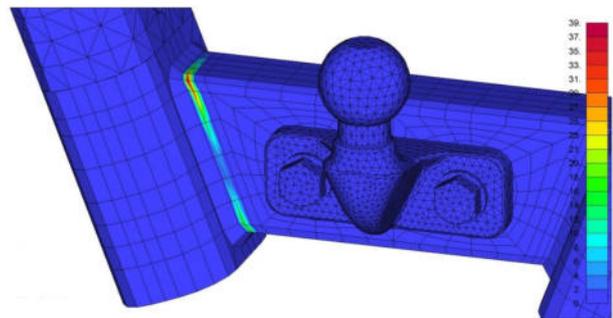
winLIFE GEARWHEEL&BEARING

Fatigue analysis: Calculation for component parts necessary for calculating gearwheels and bearings.

You can use it together with the ZAR-software of HEXAGON

winLIFE CRACK GROWTH

Calculating crack growth in mode I according to Paris and Erdogan Ratwani.



winLIFE STATISTIC

Getting relations between single parameters and fatigue life in a parameter range. Creating combinations of parameters (DOE), automatic calculation of variants, multiple nonlinear regression analysis, and graph. Various investigations are performed.



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