



Overview of innovations in winLIFE 2021

– User interface

- Random, FE-interface for broadband processes (Dirlik) and narrowband processes (Weber) implemented
- Random optimization, revision of the RANDOM graphics (PSD / collective), incorporation of several probabilities of occurrence.
- Calculation method and interface for modal superposition implemented
- Better definition of Component SN curve → Load FKM (edition 2012/2003)
- Splash screen built in for a faster start
- The version number of winLIFEFE.dll is output in the info dialog
- The rough analysis can also be used within the menu item 'Calculate selected projects'
- Load a specific user.config (Extras menu)
- menu item, local videos removed

– Viewer4winLIFE

- The last graphic settings of the Viewer are saved
- The calculation of the stress gradients on the symmetry surfaces can optionally be switched off
- Viewer in postprocessing: node sets that are not used can be edited
- Viewer in postprocessing mode can edit unused node sets
- Multiple definition of the node sets possible
- Automatic icons for multiple views in the viewer



Overview of innovations in winLIFE 2021

– FE-Interface

- Adams FE interface, stress files with the ending asc and geometry data with 'dat' can be read. Adam's 'dac' files can be read in as a load
- Extended non-linear interface. All stress curves are now written to a file
- Famos files with the X-axis definition format version 2 can now be read

– Solver

- Optimization of the speed when adding the nodes in container projects with a large number of nodes
- Improvement of the partial load calculation - speed optimization
- Error output in the winLIFE batch process improved

– FKM

- FKM upper / lower load, the stress components (sx, sy, ... H1, H2) are compared component by component. According to this, the arithmetically greatest stress is the upper load
- SN curves can be defined as attributes

– Others

- 3D cutting-plane calculation
- Examples 44 and 45 new

– **See chapter 10 of the installation instructions**

New features Random

FE Interface - Nx, NASTRAN (dat/op2)

NASTRAN op2 file interface

FE stress - file: Hinge_random_Nmm_1g.op2 ... selected stress: sigma x

Path: \

Parameters for calculation

number values: 200 duration of measurement [s]: 600

min. range: 0 limit of irregulation factor I: 0.95

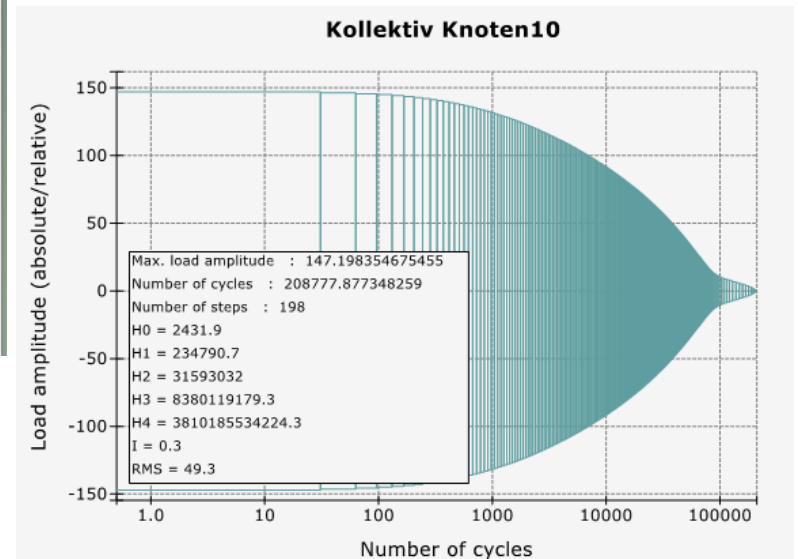
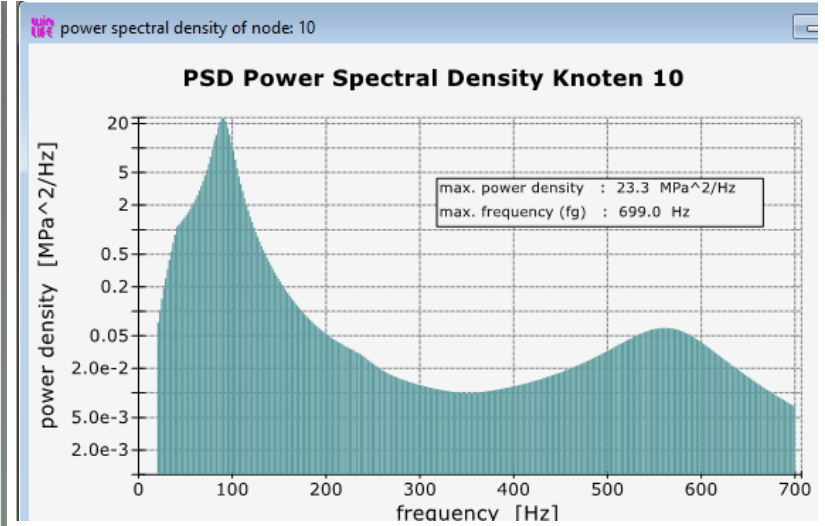
probability of occurrence [%]: 99.73002 (3 Sigma) Conversion factor PSD: 4

probability of occurrence (with arrow pointing to the selected value)

FE Geometry: \Hinge_random_Nmm_1g.dat

Node: Use all nodes Node Selection: D:\winLIFE examples\Example 44 - Random Fatigue Hinge\Knotenliste.kno

Buttons: Edit, New, OK, Cancel, Help



Attribute SN curve in winLIFE 2021 FKM

Views

Viewer - FE

Options...

Node sets
Element sets
Results
Nodes
Nodes informations
Nodes attributes

- SN number
 - Beispiel_1_Materialnummer 73
 - 42 CrMo 4 270618_1.7225 85
 - 25 CrMo 4_21082018_1.7218 93

Node attributes

Node attribute:
Wählerliniennummer (WNR)

Attribute value: Beispiel_1_Materialnummer 73

- Beispiel_1_Materialnummer 73
- E_N_example_3_Materialnummer 48
- E_N_example_4_Materialnummer 53
- example_41_Materialnummer 95
- 116264 WNR: Kurzname_Materialnummer 45
- 116468 WNR: OM646_ASME_Materialnummer 97
- 116635 WNR: PH13-8Mo H1050-Ra3.2_2_1.4534 96
- 116703 WNR: S_N_example_1_Materialnummer 46
- 116732 WNR: S_N_example_2_Materialnummer 47
- 116833 WNR: S_N_example_5_1_Materialnummer 64
- 117060 WNR: S_N_example_5_2_Materialnummer 65
- S_N_example_6_Materialnummer 58
- S_N_example_7_Materialnummer 56
- S_N_example_8_Materialnummer 57
- Seminar_Mux_01_Materialnummer 68

Method: Box

Only surface node
 Include midside nodes