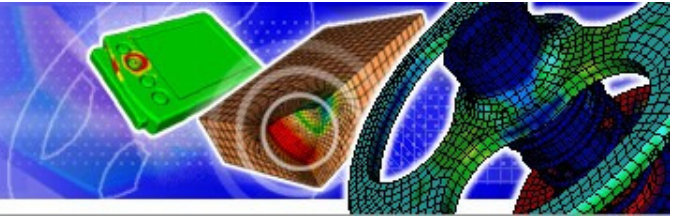


Durability by Design

Innovators in Fatigue Analysis



FatigueWizard

FatigueWizard is an innovative software product which will enable any CAE engineer to utilise results of a finite element analysis to carry out sophisticated, accurate fatigue life calculation.

"FatigueWizard makes complex fatigue life assessment both achievable and affordable. The benefits of performing durability assessment as part of the design process is well known. FatigueWizard will realise these benefits for those who previously may not have had the skills or budgets."

The image displays three overlapping screenshots of the FatigueWizard software interface. The top-left window, titled "FatigueWizard for Non-FEA Linear v7.0.0 Step-1 of 7", shows a "Steps" sidebar and a main area with options for "Fatigue Life Calculation" (Strain Based (EN) selected, Stress Based (SN) unselected) and "Fatigue Safety Factor Calculation" (Haigh Diagram unselected). The top-right window, titled "FatigueWizard for ALGOR Linear v7.0.0 Step-9 of 9", displays a "Model Name" list (Part1, Part2, Part4, Part5) and a "Fatigue Safety Factor - sigmaM" plot with a color scale from 2.8558 to 32.0000. The bottom window, titled "FatigueWizard for Non-FEA Linear v7.0.0 Step-4 - Loadcase 1 history input", features a "Manual Data Input/Edit" table and a "Non-FEA Loadcase 1 - time history" graph.

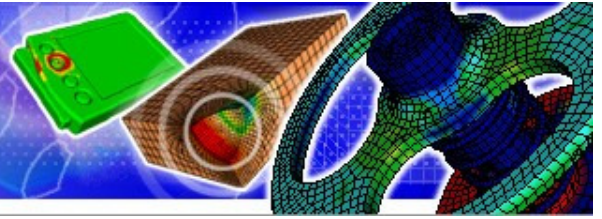
Time	Multiplier
1	.999
2	255
3	-.875
4	201
5	-.177
6	433
7	-.487
8	-.172
9	790

The graph shows a highly oscillatory signal (Multiplier) over a time period of 0 to 6000. The y-axis ranges from -1000 to 800, and the x-axis ranges from 0 to 6000. The signal fluctuates rapidly between approximately -800 and 800.

For more Information please visit: www.fatiguewizard.com

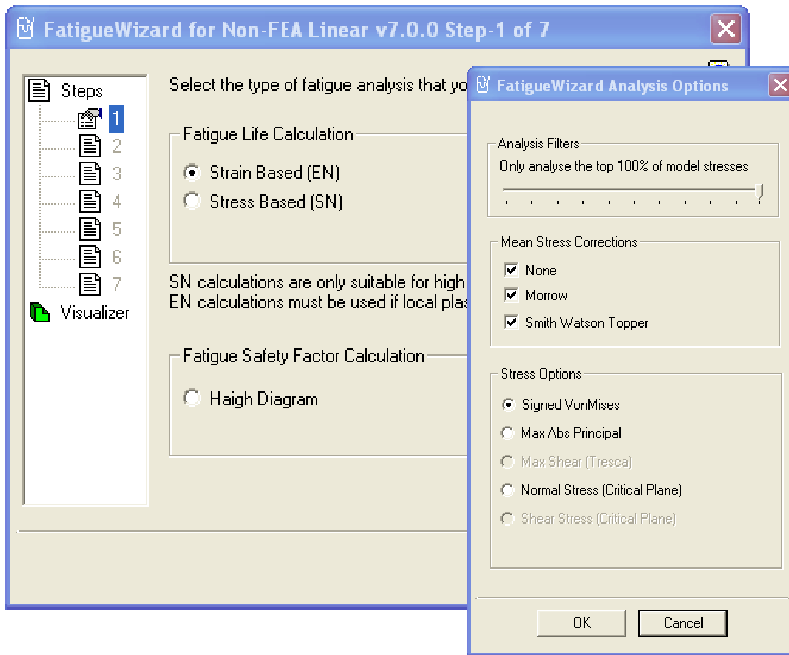
Durability by Design

Innovators in Fatigue Analysis



FatigueWizard is a fully featured fatigue analysis tool with the ease of use of a standard 'windows wizard'

Durability Assessment Methods

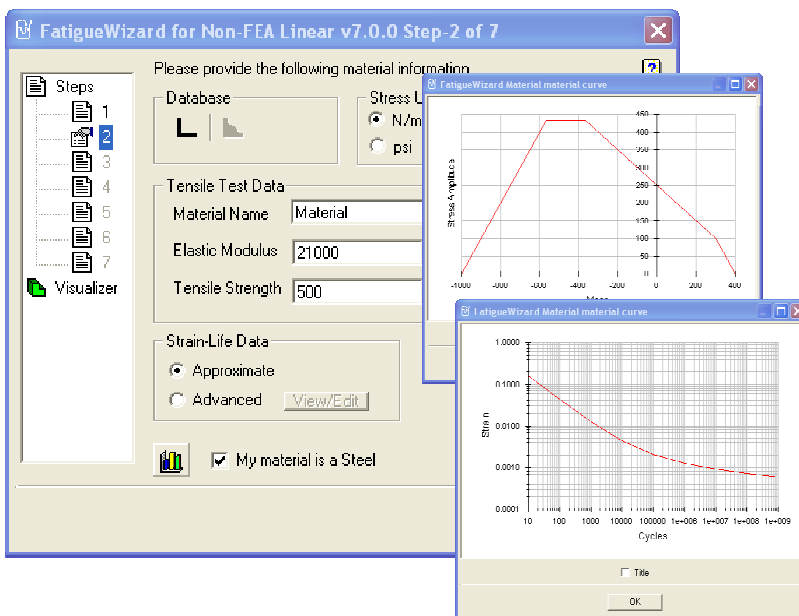


FatigueWizard can be used to carry out three basic types of durability assessment

- Fatigue Safety Factors (FSF) using Haigh/Goodman
- Total Life or Stress based Life (SN)
- Life to Crack Initiation or Strain based Life (EN)

Advanced features allow the more experienced user to choose analysis options which best suit any type of situation.

Materials



FatigueWizard is supplied with an extensive materials database.

The database is fully editable allowing the user to add materials as required.

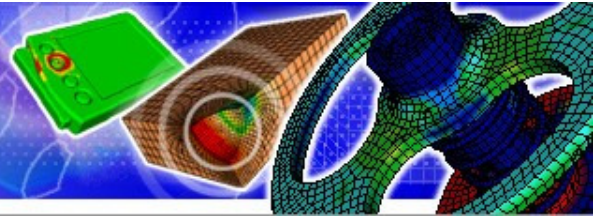
For strain based materials the user may wish to use the approximation method for materials which are not available in the database.

For more Information please visit:

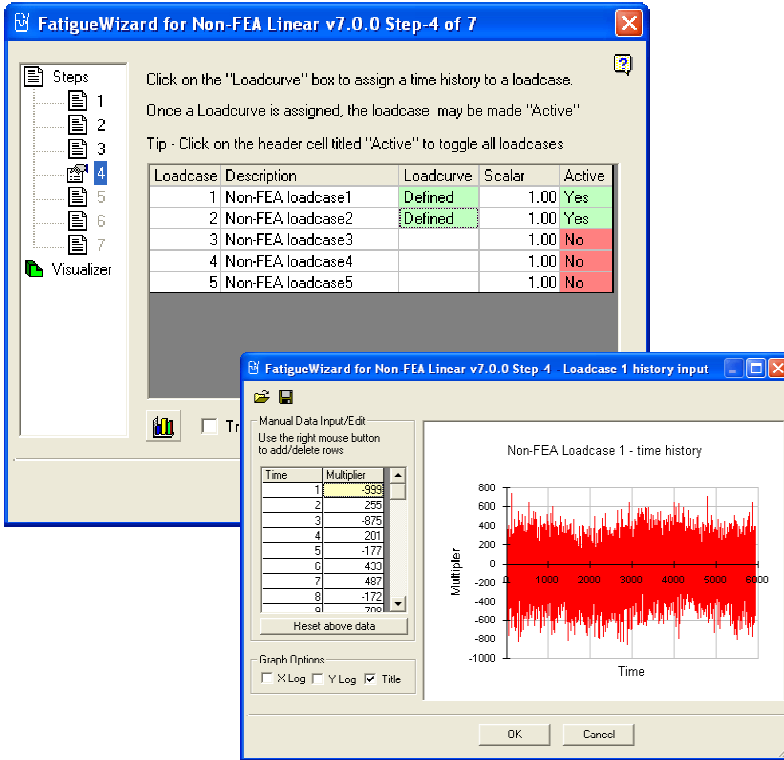
www.fatiguewizard.com

Durability by Design

Innovators in Fatigue Analysis



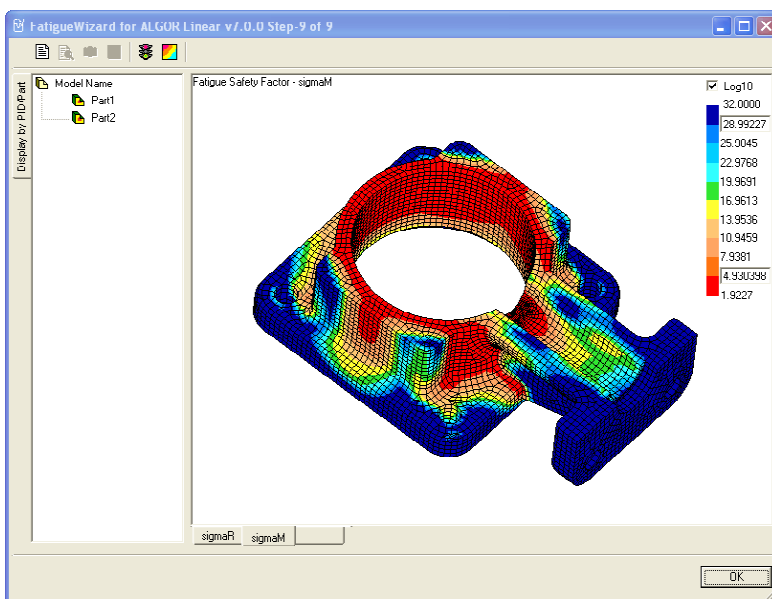
Non-Proportional Multi-Load Analysis



FatigueWizard is capable of defining and analysing most loadcase situations.

- single constant amplitude loadcases
- non-proportional multiple loadcases
- Loadcase combination
- Sequential Loadcases
- Complex load histories upto 30000 data points
- Load history import using standard csv format

Results Post-Processing



FatigueWizard is supplied with it's own OpenGL postprocessor to enable the user to visualize both the model and results

- Life Contours
- FSF Contours
- Integrated report writer
- Export of results to native FEA formats

For more Information please visit:

www.fatiguewizard.com

Summary of Features

Wizard Interface

Intuitive
Interactive data checks
On-line help
Windows 2000/XP/Vista

FE Interfaces

Algor
Ideas
Strand7
Femap
User Defined

FE Input

2D shells
3D solids
Elastic FEA Stresses
Single Point Results

Materials

Extensive Database
Editable
SN Data
Strain Life Data
Material Approximation
Welds to BS7608
Curve Plotting

Loads

Constant Amplitude
Proportional
30000 Point History
Import using CSV

Fatigue-Safety-Factor (FSF)

General Haigh Diagram
Goodman Diagram

Stress-Life (SN)

Total Life
Safety Factor
Mean Stress Correction
Goodman
Gerber
Welds to BS7608

Strain-Life(EN)

Crack Initiation Calculation
Safety Factor
Neuber Plasticity
Mean Stress Correction
SWT
Morrow

Modifiers

Surface Finish
Kf
Load Scalars
User Defined

Post Processing

Integrated OpenGL
Life Contours
Safety Factor Contours
FSF Contours
Export to Native FEA
Integrated Report Writer

FatigueWizard has been developed to enable even inexperienced CAE analysts to complete effective durability assessment. It utilises an innovative 'wizard' interface designed to lead the user through the steps necessary to perform complex fatigue life calculation. Results can be viewed as life or safety factor using the FatigueWizard post processor or exported and viewed in the native FE software. The FatigueWizard can then be used to generate customisable reports with minimum effort or time.

FatigueWizard is fully capable of performing sophisticated fatigue life analyses; from conventional stress based analyses to 'low cycle' strain based analyses with plasticity correction. Mean stress corrections can be accounted for using standard methods and endurance modifiers such as surface finish, temperature etc are all available to the user. For a complete list of the capabilities within the FatigueWizard see the list of extensive features opposite.

