LIMIT Universal Interface

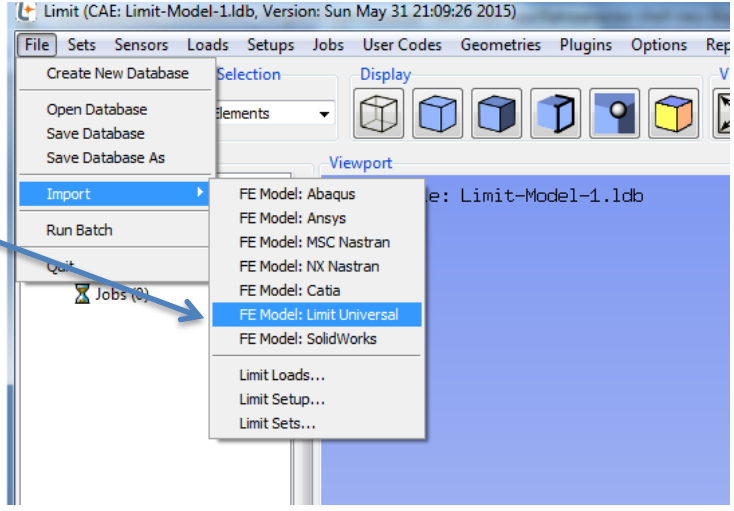
Using LUI Interface

- **To use the LIMIT-LUI-Interface you need a ‘flattened‘ abaqus input file**
- **The file extension must be switched from .inp to .linp**
- **The resultfile must be a .lui file (for more information about the .lui file read the document** ‘LIMIT_2020_Universal_Interface_Programmers_Guide.pdf ‘

The following 3 slides show the procedure using the LUI (LIMIT Universal Interface).

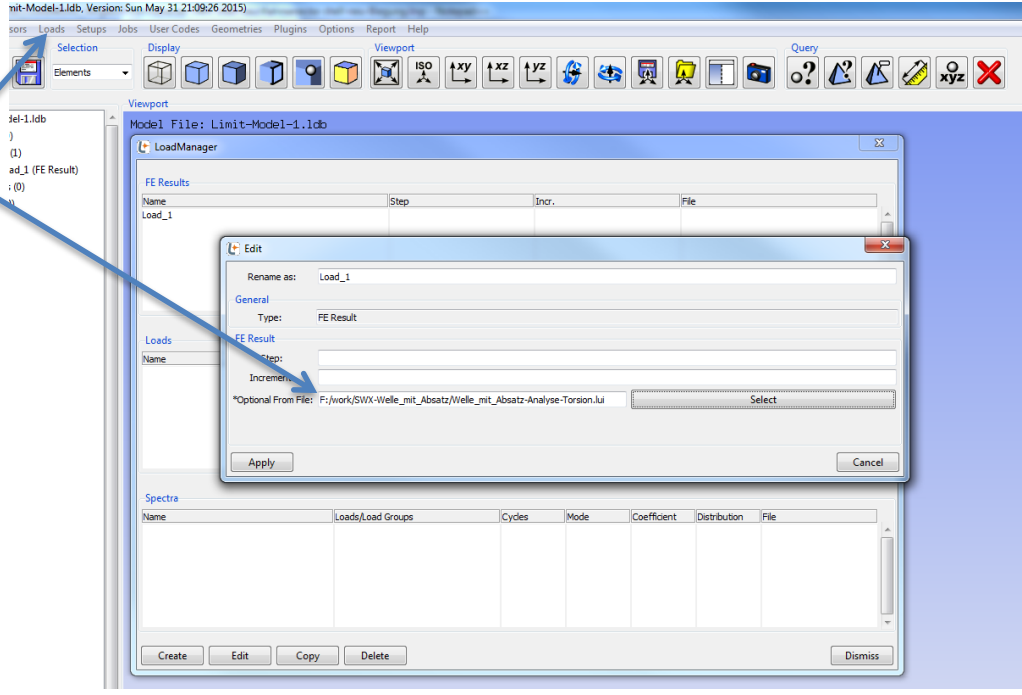
Importing the .linp-file into LIMIT-CAE:

- A ‘flattened‘ Abaqus .inp-file can be imported by Limit.
- Klick File / Import / FE Model: Limit Universal



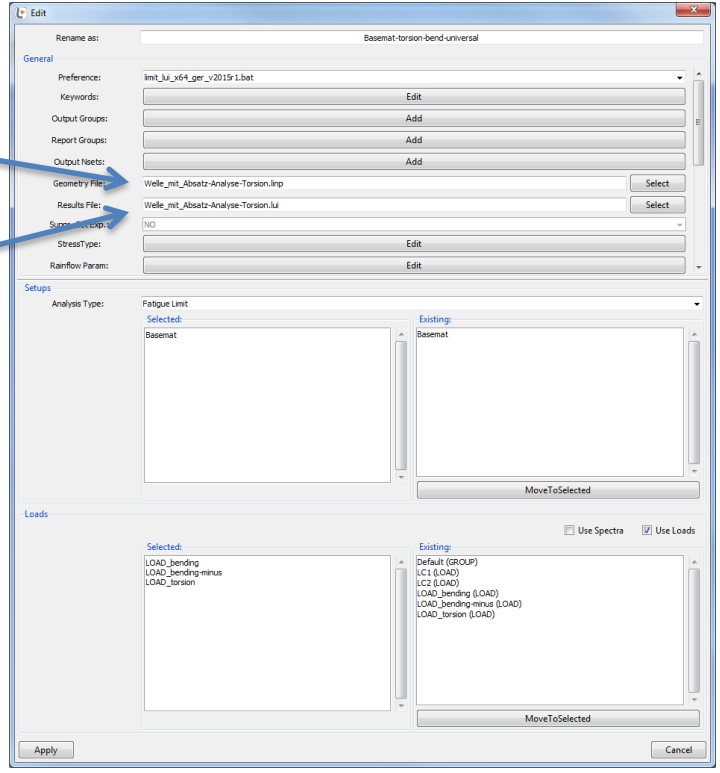
Load definition:

- The LIMIT loads can be defined by FE Results (.lui-file)
- Klick Loads / Open Load Manager
- Klick Create and Choose the .lui-file to use the FE- results in the LIMIT run
  (For more information about the .lui-file read the document 'LIMIT_2020_Universal_Interface.pdf '



Running a LIMIT job based FE-run with a .lui result file:

- In the field ‘Geometry File‘ select the .linp-file
- In the field ,‘Results File‘ select the .lui-file



Specification of the interface

- **Maximum nodenumber respectively elementnumber :**
  - Windows 64 bit (x64): 50000000
- **Maximum number of nodes :**
  - Windows 64 bit (x64): 6000000
- **Maximum number of elements :**
  - Windows 64 bit (x64): 6000000
- **These LIMITS can be changed by the user. See document LIMIT_2020, section: *Redimensioning of Arrays***

Following elements can be analyzed:

- **Solids :**
  - quadratic 3D-Solids (10 nodes tetrahedrons)
- **Shells:**
  - quadratic shells (6 nodes triangles)

Solid assessment:

- **Goal of a LIMIT FKM proof of strength:**
  - Assessment of surface stresses (2D-tensors)
  - Popular method and conservative
- **Free surfaces:**
  - Are necessary for the consideration of stress gradients normal to the surface
  - Are identified by the software LIMIT
  - Can be generated by covering the solids with 2D-elements (skin) in the preprocessor.
- **2D-skin elements can be assessed as well**
  - But without supporting effect => conservative
  - This leads to considerable less data
- **Supporting effect is only possible with solids!**
  - Results of a 3D analysis with good element quality and fine meshing are more precise than results of 2D-skin elements.