

# INTEGRATED FATIGUE SOLVER FOR ANSYS WORKBENCH

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## ABSTRACT

The fatigue analysis is an essential part of the design process for machines experiencing dynamics loading such as vehicles and internal combustion engines. There is a need to integrate fatigue evaluation as an easy and fast step in Ansys simulation process for both infinite and finite life evaluation. Ansys supports APDL and IronPython scripting interfaces and IronPython scripting interface is chosen for the solver. There are many fatigue criteria from which to choose. The selection is based on accuracy and speed as well as suitability for comparison. Mean stress correction applied for equivalent stress and it is done using Haigh-diagram. Different types of Haigh-diagrams is used for different materials. Parallel computing is applied to take advantage of the multi-core environment.