**FLTR 4.0 - automatic tool for blade flutter prediction in ANSYS CFX**
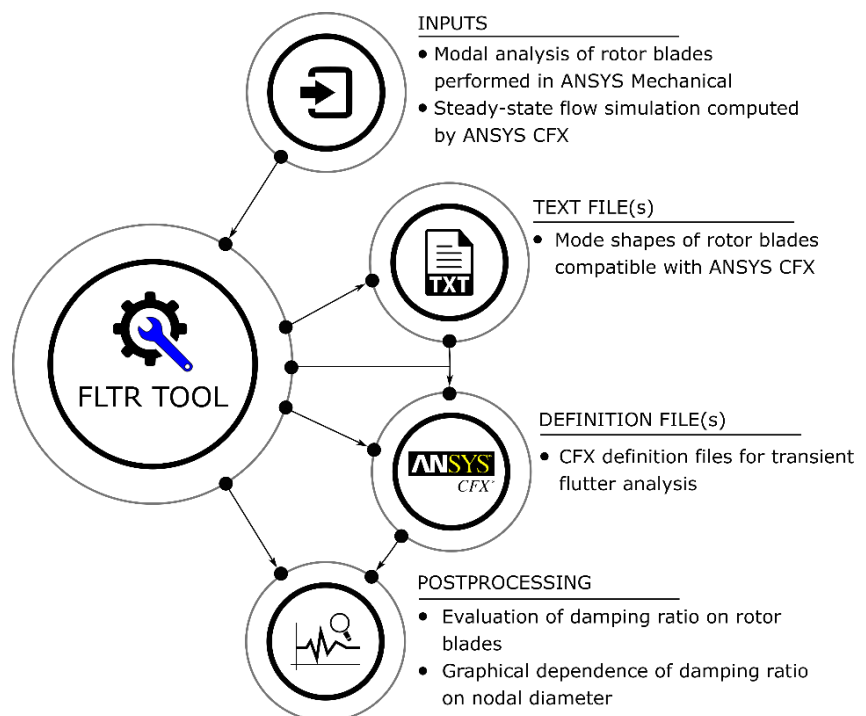
KEY PURPOSES:

- Automation of blade flutter prediction in ANSYS CFX for turbines and compressors
- Complex unsteady CFD analysis with all geometric details
- Significant reduction of manual preprocessing and postprocessing – 95%
- Reduction in simulation time – more than 60%
- Comparability of flutter results – same methodology
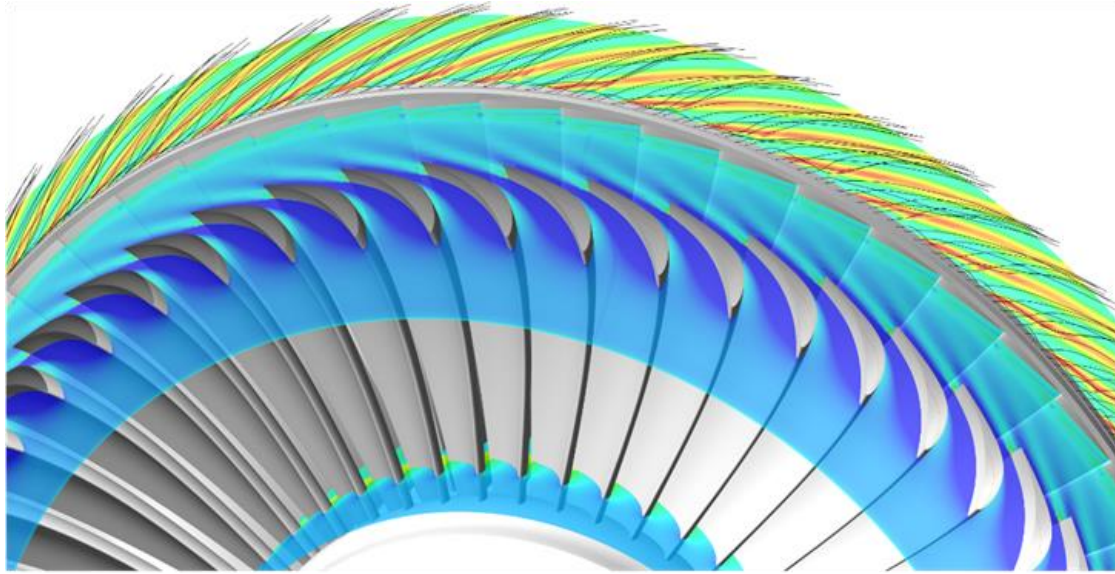
DESCRIPTION:

Design of the rotor blades for rotating machines is a complex procedure involving the study of the interaction between structural dynamics and aerodynamic forces – flutter analysis. Flutter analysis involves several steps that are constantly repeating: modal analysis, aerodynamic work calculation and damping ratio evaluation. We would like to introduce our tool for the automation of flutter analysis in ANSYS CFX. The tool automates the generation of transient input files for CFD simulations and the evaluation of damping ratio from aerodynamic work done on blades. Are you performing flutter analysis on daily basis and would you like to significantly reduce time of your analyses? We can help you with our FLTR tool.

INPUTS
- Modal analysis of rotor blades performed in ANSYS Mechanical
- Steady-state flow simulation computed by ANSYS CFX

TEXT FILE(s)
- Mode shapes of rotor blades compatible with ANSYS CFX

DEFINITION FILE(s)
- CFX definition files for transient flutter analysis

POSTPROCESSING
- Evaluation of damping ratio on rotor blades
- Graphical dependence of damping ratio on nodal diameter

OTHER BENEFITS:

- Excellent support with long time flutter knowledge
- Methodology validated against an experimental measurement
- Efficient flutter results storage (S-shapes, Flutter maps)
- FLTR tool training with a practical tutorial (onsite/online)
- 3D unsteady viscous flow/structural analysis
- Stage geometry with cover and tie-boss
- Stator/Rotor unsteady interaction
- Complex mode shapes
- Mode shapes precheck
- All types of turbomachines

POSTPROCESSING

LSB WITH COVER AND TIE-BOSS

STRUCTURAL ANALYSIS

LSB WITH COVER AND TIE-BOSS
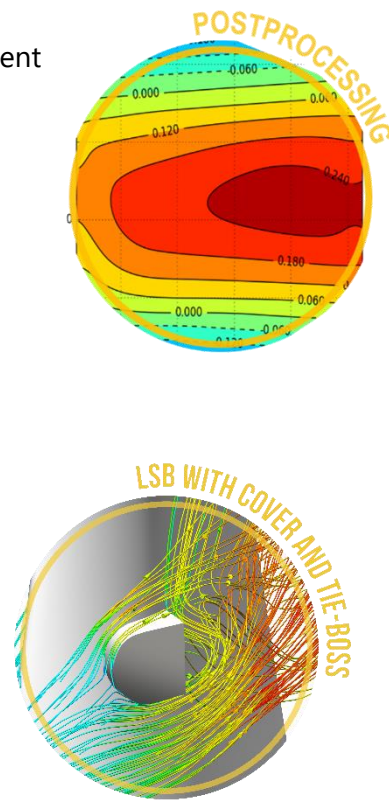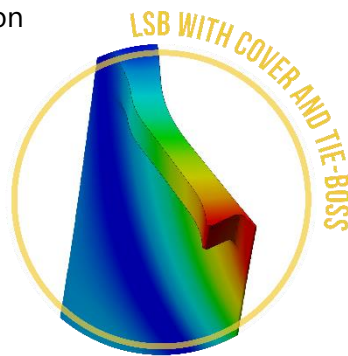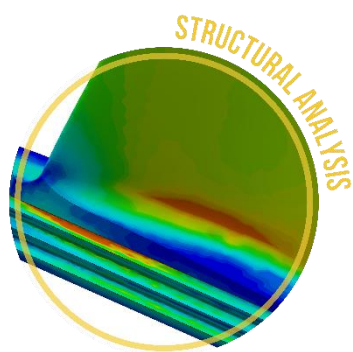
SOFTWARE/HARDWARE REQUIREMENTS

- Supported OS: Windows/Linux
- ANSYS 2019 R3
- Python 3.6

CONTACT:

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