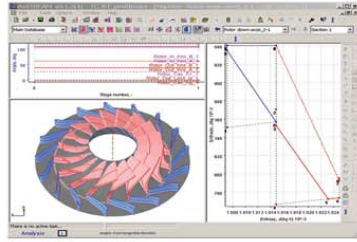


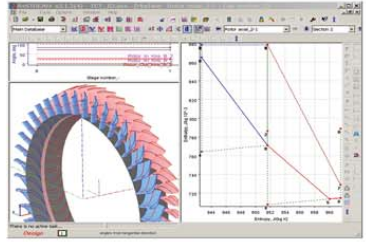
Overcome Turbocharger Design challenges with AxSTREAM!



- Mixed Axial/Radial flow path design “from scratch” using a small number of basic parameters and a set of geometric constrains.



- Multistage centrifugal compressor of single-shaft or integrally-geared types with selection of additional elements can be designed and simulated.

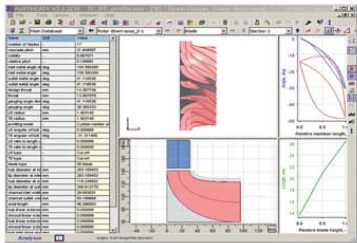


- A standardized interface for turbine and compressor design. Uniform set of modules for optimization, profiling and exporting.

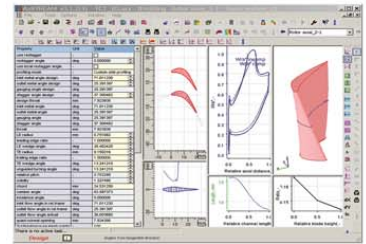
- The calculation model may include different elements: blade, nozzle, stage, duct, valve, plenum, heat exchanger, volute, return channel etc.

- Preliminary flow path design and sizing with functionality to pre-screen and visualize hundreds of designs. Capability to choose an optimal number of stages, blades and flow path dimensions.

- Flow path meanline analysis and optimization which supports “as-designed” and “off-design” operational conditions.



- Meanline and throughflow analysis of radial turbine and compressor stages.



- Meanline and throughflow analysis of mixed type compressors with axial and radial stages. Enhancement and optimization of stage radial and meridional dimensions.

- Performance maps generation including flow path of variable geometry: vanes rotating schedule.



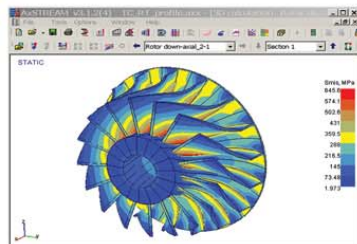
- Integrated multidisciplinary optimizer based on design-of-experiment (DoE) methodology capable of building characteristics curves and searching for optimal solution of multi-criteria problems.



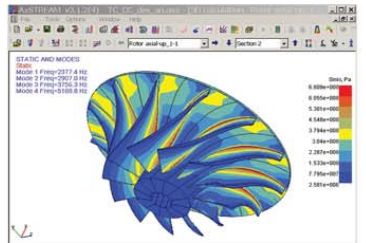
- Generation of the cascades with interactive editing and optimization. Flow and boundary layer calculation.

- Camberline/Thickness profiling methods with interactive editing.

- 3D airfoil design in automatic and interactive modes with geometric and strength criteria monitoring. 3D blade design with custom lean.



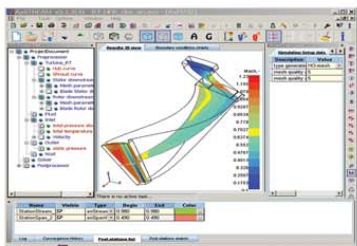
- Volute design. Creation and export of 3D volute geometry.



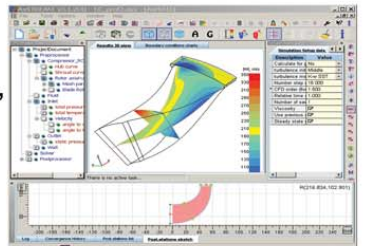
- Embedded system for express 3D structural and modal analysis with automatic mesh generation.

- Embedded system of 3D CFD analysis in blade channel with automatic building of the designed models.

- Corporate-value features - loadable custom-defined fluid models and loss models and material databases.



- Export 3D airfoil geometry for detailed CFD analysis to NUMECA, CFX and Fluent solvers.



- Export 3D airfoil geometry in IGES formats for CAD/CAE packages.