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## Axial Compressor Design with AixCompFlow 2D and STAR-CCM+



The axial compressor design of gas turbines is very important with respect to increase of power plant efficiencies. The optimization of the compressor design is usually performed by application of 1D or 2D through flow codes. However, the 3D flow analysis has become more important in recent years for further improvement of compressor efficiency by adapting the geometry to local flow phenomena. The 2D streamline curvature tool AixCompFlow2D has been developed for design and analysis of heavy duty axial compressors. By application of the TurboWizard, it has been linked to STAR-CCM+, so that the user can semi-automatically generate a full 3D model of the entire compressor within a very short time and subsequently perform a 3D flow analysis. This presentation demonstrates the application of AixCompFlow2D in combination with STAR-CCM+ for such kind of analyses on basis of an example axial compressor. The management of the 2D tool, of the TurboWizard and of STAR-CCM+ including the result analysis during the compressor design process is shown to the audience.

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