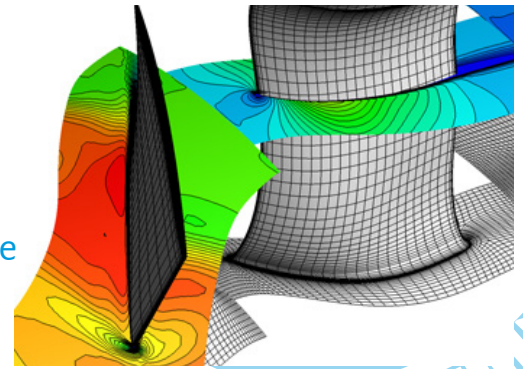


GPPS 2nd Turbomachinery CFD Workshop

The GPPS 2nd Turbomachinery CFD workshop will take place as part of the GPPS Chania22 conference on September 11, 2022 in a hybrid format.



Built upon the experience from the 1st workshop, we would like to launch our 2nd workshop. The theme of this workshop is "Validation and Verification of RANS Turbomachinery Solvers on the TUDa-GLR-OpenStage Transonic Axial Compressor and the BUAA Low Speed Large Scale Axial Compressor-Stage B. The workshop is expected to draw more participants this time, as quite a few participants from industries (SIEMENS Energy, IHI, ITP, Aero Engine Academy of China, Korea Aerospace Research Institute) and software companies (Cadence Design Systems, Turbostream) have already confirmed their participation.

How to participate

Participants are welcome to analyze the two cases, submit their prediction results, attend the workshop to present their results, and listen and learn from the discussions. In the workshop, the organizers will present a summary of all submitted data. After that, each participant submitting the prediction results will have a 10-min rapid talk to present their results. No paper submission is required. A step-by-step participation guide can be found from the workshop webpage:

<https://gpps.global/gpps-2nd-cfd-workshop/>

Workshop Organizers

Our organizers have wide background: academia, industries, and software companies.

Imperial College London

Mehdi Vahdati, Xiao He

Northwestern Polytechnical University

Shenren Xu, Dongming Cao, Dingxi Wang

SIEMENS Energy

Senthil Krishnababu

Cadence Design Systems

Domenico Mendicino, Benoit Tartinville

Beihang University

Guangfeng An, Xianjun Yu

Technical University

Darmstadt

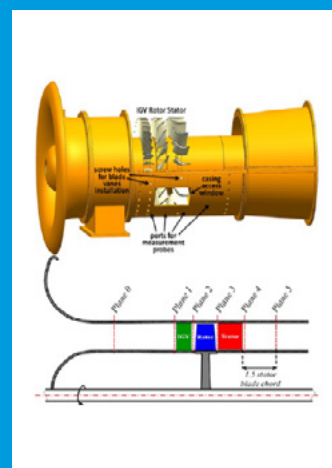
Fabian Klausmann

Motivation

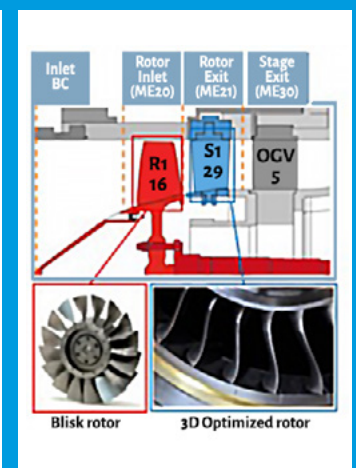
RANS simulation is the industrial workhorse for predicting turbomachinery flows. However, due to the errors and uncertainties involved in the experiments and CFD models, users can occasionally find inconsistencies and deficiencies in RANS results, which degrades users' trust in RANS turbomachinery solvers. This workshop aims to improve users' trust in RANS turbomachinery solvers by conducting a validation and verification (V&V) study on two cases: the TUDa-GLR-OpenStage transonic axial compressor and the BUAA low speed large scale axial compressor-Stage B.

Objectives

1. Troubleshooting and version control of numerical models in existing in-house and commercial turbomachinery RANS solvers.
2. Enhance understanding of RANS prediction capability for subsonic and transonic axial compressors
3. Develop a best practice guide of RANS solvers for subsonic and transonic axial compressors.
4. Promote education of the next generation turbomachinery CFD engineers.



BUAA Low Speed Large Scale Axial Compressor-Stage B



TUDa-GLR-OpenStage Transonic Axial Compressor