

Rheinisch-Westfälische  
Technische Hochschule Aachen University  
Head of Institute: Univ.-Prof. Dr.-Ing. P. Jeschke  
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## License Agreement

for the

### CFD Test Case

*Centrifugal Compressor "RadiVer 2" with MTU Impeller*

*of RWTH Aachen University*

The test data of this test case was generated by Dr.-Ing. Stefan Ubben during his doctorate project under the scientific supervision of Univ.-Prof. Dr.-Ing. R. Niehuis (09/1998 – 02/2006) at the Institute of Jet Propulsion and Turbomachinery (IST) of RWTH Aachen University, Germany.

The research project was funded by Carrier Corporation Syracuse, USA and Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) to some extent, which is gratefully acknowledged. The impeller of the centrifugal compressor was provided by MTU Aero Engines GmbH, Munich, as a donation to be used for research purposes, which is also gratefully acknowledged.

The test case "RadiVer 2" is open to everyone, who wants to use the data base for CFD validation. The provision of this test case is intended to be a contribution to the field of research on "diffuser clearance effect" and "unsteady CFD in centrifugal compressors" in order to advance progress in these fields. The provider of the test case highly appreciates to share results, experience and other useful information among the group of users and encourages all users to participate in that sense. Joint publications are welcome.

By signing this license agreement the user accepts:

- to not give access to anybody else to the contents of the test case
- to not distribute the contents of the test case to third parties
- that he does not gain any rights on the obtained data or any other information on the test case.
- to cite in every publication (or in any other form of communication) the source and origin of his information, i.e. naming the authors and the institute. If the test case is used in any form of publication, the relevant publications below must be cited. Furthermore, the origin of the data base must be mentioned as follows: "The measurements on the test case "RadiVer 2" were carried out at the Institute of Jet Propulsion and Turbomachinery at RWTH Aachen, Germany. Part of the investigations was funded by Carrier Corporation Syracuse, USA and the Deutsche Forschungsgemeinschaft (DFG)"
- to give feedback to the Institute of Jet Propulsion and Turbomachinery at RWTH Aachen about what he did with the provided information. Participation in the potential workshops and inclusion of these results in the data base are solicited and welcome.

**Relevant publications of the test case:**

- [1] Ubben, S., Niehuis, R.  
Investigation of the Diffuser Clearance Effect in an Industrial-Like Centrifugal Compressor  
ISABE-2005-1223, 2005
- [2] Ubben, S.  
Experimentelle Untersuchung des Diffusorspalteinflusses in einem Radialverdichter mit variabler Leitradgeometrie  
Doctoral Thesis RWTH Aachen (in German), 2013
- [3] Ubben, S., Niehuis, R.  
Experimental Investigation of the Diffuser Vane Clearance Effect in a Centrifugal Compressor Stage with Adjustable Diffuser Geometry: Part I – Compressor Performance Analysis  
ASME Paper GT2014-26896, 2014
- [4] Ubben, S., Niehuis, R.  
Experimental Investigation of the Diffuser Vane Clearance Effect in a Centrifugal Compressor Stage with Adjustable Diffuser Geometry: Part II – Detailed Flow Analysis  
ASME Paper GT2014-27175, 2014

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