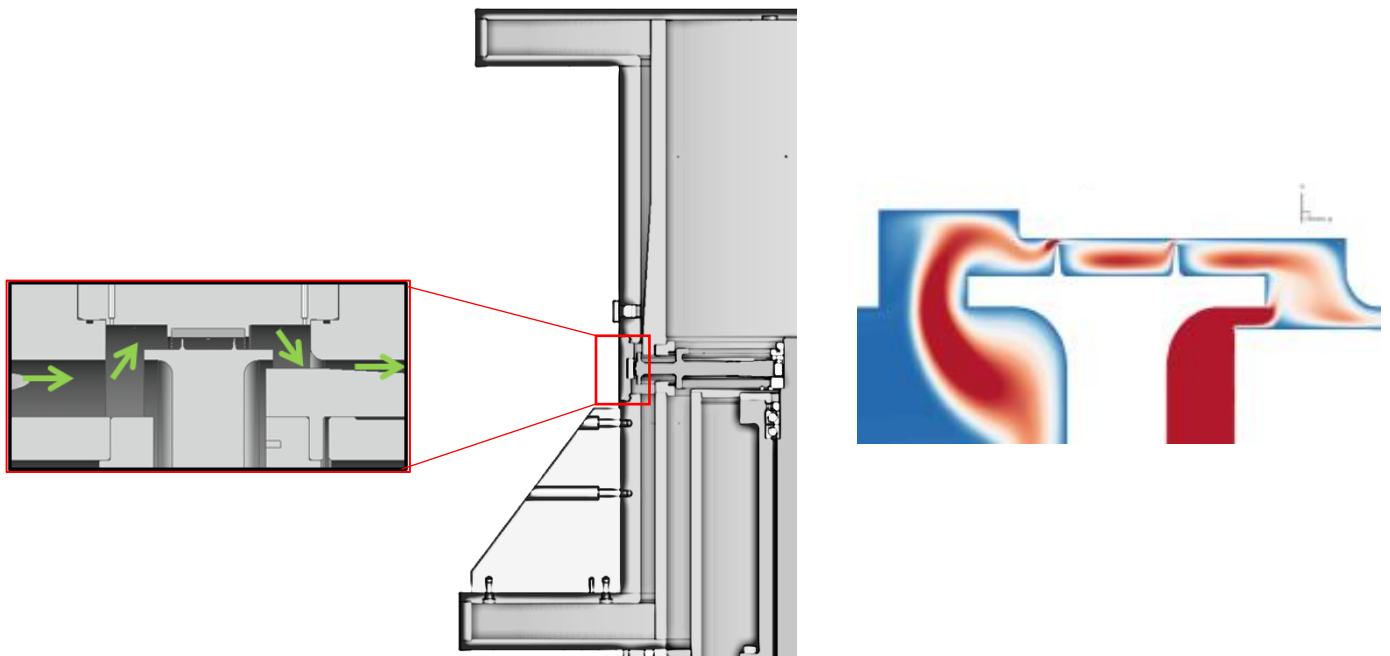


Masterarbeit

Design of a Shroud Cavity Cooling Air Injection Concept



Background

In low pressure turbines of modern aircraft engines, the rotor stages are provided with a shroud for aerodynamic and structural reasons. The shroud creates a cavity between the rotor and the stationary casing. The innovative design of cavities is a key aspect of increasing efficiency and reducing fuel consumption in modern engines.

TFD operates the rotating labyrinth test rig (RLP) to investigate such cavities. The RLP serves to aero engine companies and shapes the future of the shroud cavity design.

As a new concept, the idea is to cool down the shroud cavity region, thus; to decrease CO₂ emission by increasing the efficiencies and have less temperature for the turbine parts.

To extend the test-rig a secondary air path has to be designed which goes through the rotor and injects air to the shroud cavity.

Your Profile

- Well understanding of thermo- and fluid-dynamics
- Good knowledge of Solid Edge, incl.
- Have knowledge of creating technical drawings
- Enjoy researching
- Good command of English

Your tasks

- Literature search
- CAD-Design of the cooling air path to the shroud cavity
- CFD-based optimization of geometry
- Documentation

Contact

Are you interested?

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